Volume Title: Recent Economic Changes in the United States, Volumes 1 and 2

Volume Author/Editor: Committee on Recent Economic Changes of the President's Conference on Unemployment

Volume Publisher: NBER

Volume ISBN: 0-87014-012-4

Volume URL: http://www.nber.org/books/comm29-1

Publication Date: 1929

Chapter Title: Price Movements and Related Industrial Changes

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Chapter URL: http://www.nber.org/chapters/c4963

Chapter pages in book: (p. 607 - 660)

CHAPTER IX

PRICE MOVEMENTS AND RELATED INDUSTRIAL CHANGES[1]

By Frederick C. Mills

There are three points of obvious difference between the price conditions prevailing during the years which have elapsed since the deflation of 1920–21 and the conditions which characterized the period immediately preceding the war. The level of wholesale prices is approximately 50 per cent higher. The trend of wholesale prices has not been rising, as in prewar years; the net movement has been slightly downward during the last seven years. The slightly declining trend of wholesale prices has been associated with increasing physical productivity, rising wages, and increasing profits, an association with but few precedents in prewar experience. It is the purpose of this chapter to investigate some of the details of the postwar price situation, to consider the relations among different elements in the postwar price structure, and to compare tendencies prevailing among these elements. In making such a study, account must be taken, of course, of the relation of prices to industrial and business changes.

The Postwar Price Situation—International Comparisons.—Economic conditions in the United States parallel, to some extent, conditions in other industrial countries. The data upon which international price comparisons must be based are not in all respects satisfactory, but a rough comparison will furnish a background for the study of developments in the United States. We may compare different countries, first, in respect to present price levels (measured from a prewar base), and secondly, in respect to postwar price trends.

It is not possible accurately to compare price levels and price trends in different countries. Official index numbers differ in their technical construction and in the lists of commodities upon which they are based. Certain countries are upon gold bases, while in other countries paper currencies prevail or have prevailed during part of the period to be studied. Accordingly, the comparison will not be as accurate as the quoted figures might indicate.

Table 1 shows 18 countries ranked according to the degree of price rise between 1913[2] and 1927. The indexes for countries in which paper

[1] W. E. Dunkman and Miss Mabel Lewis rendered valuable assistance in the preparation of this chapter.

[2] In a few cases the base is a month, or several months, in 1914.

prices prevailed in 1927 have been expressed in terms of gold prices, the correction being made in each case by applying the exchange rate on New York.

TABLE 1.—RANK OF 18 COUNTRIES ACCORDING TO LEVEL OF GOLD PRICES, WHOLESALE, 1927, WITH REFERENCE TO PREWAR BASES[a]

Country	Index of wholesale prices	Country	Index of wholesale prices
Russia	171	Sweden	146
Japan	170	Switzerland	[b]142
Norway	167	Great Britain	141
Australia	167	Germany	138
Denmark	152	Austria	[c]133
Canada	151	Italy	[d]133
Netherlands	148	France	[d]126
United States	147	South Africa	124
New Zealand	147	Belgium	[e]123

[a] The base is 1913, except where otherwise noted.
[b] Base: July, 1914.
[c] Base: first half 1914. The index, as given, is on a gold basis.
[d] Gold basis.
[e] Base: April, 1914. Gold basis.

NOTE.—Following are descriptions of the index numbers quoted in the table: Russia, Central Bureau of Statistics, 69 commodities; Japan, Bank of Japan, 56 commodities; Norway, Central Bureau of Statistics, 95 commodities; Australia, Commonwealth Bureau of Census and Statistics, 92 commodities; Denmark, Department of Statistics, 118 commodities; Canada, Dominion Bureau of Statistics, 236 commodities; Netherlands, Central Bureau of Statistics, 48 commodities; United States, Bureau of Labor Statistics, 404 commodities; New Zealand, Census and Statistics Office, 180 commodities; Sweden, Chamber of Commerce, 160 commodities; Switzerland, Department of Public Economy, 118 commodities; Great Britain, Board of Trade, 150 commodities; Germany, Federal Statistical Bureau, 400 commodities; Austria, Statistical Bureau, 47 commodities; Italy, Riccardo Bachi, 120 commodities; France, General Statistical Bureau, 45 commodities; South Africa, Office of Census and Statistics, 188 commodities; Belgium, Ministry of Industry and Labor, 128 commodities.

Accepting these indexes as they stand, they show that the increase in the level of wholesale prices between 1913 (or early in 1914) and 1927 ranged from 23 per cent for Belgium to 71 per cent for Russia. With the exception of South Africa, the countries having the smallest increases in terms of gold prices are those which were in 1927 on a paper currency basis. (In terms of prevailing currencies these countries showed the greatest increases.) The indexes for the nine central countries in the list fall between 138 and 152, a small range of variation. For the 18 countries here included, the median value of the indexes is 146.5, a figure almost exactly equal to the index for the United States.[3]

[3] The figure employed for the United States is the unrevised index of the United States Bureau of Labor Statistics. The revised index, when the base is shifted to 1913, gives a figure of 137 for 1927. This is substantially lower than the figure of 147 which is cited in the text. Perhaps the chief reason for the difference is that heavier weight is given to fabricated industrial products in the new index than was given in the old. For purposes of international comparison it is considered advisable to employ the old index. In the construction of most of the foreign index numbers highly fabri-

Perhaps of greater practical importance than the degree of price rise in the last fifteen years is the direction in which wholesale prices are now moving. World economic conditions during the several decades before the war were vitally affected by the rising tendency in commodity prices, a tendency common to all industrial countries. Postwar trends are of equal importance. The period which has elapsed since a condition of relative price stability was generally achieved is too short to enable the trend of postwar prices to be definitely determined, but tendencies prevailing during the six years from 1922 to 1927 are of considerable interest. The nature of these tendencies is indicated by the figures in Table 2. The movement of the official price index in each country has been expressed in terms of the average annual rate of increase, or of decrease, during the period 1922–1927.[4]

The only two countries which show pronounced price increases during the period 1922–1927 were on paper bases. When the indexes for these countries are computed in terms of gold prices, the figure for France is changed from 14.1 to −2.1, and that for Belgium is changed from 16.4

cated industrial products are omitted. If they were given as much weight, relatively, as they are given in the revised index of the United States Bureau of Labor Statistics, the general level of foreign index numbers would doubtless be lower than it is.

Somewhat more exact comparison of price changes in certain fields is made possible by the use of the special index numbers of wholesale prices in 11 countries constructed by A. L. Bowley and K. C. Smith (London and Cambridge Economic Service, *Special Memorandum* No. 24, "Comparative Price Index Numbers for Eleven Principal Countries"). The same technical methods were employed throughout, in the construction of these index numbers, and nearly identical lists of commodities were used. (The index numbers are based on quotations for 35 commodities—food products and raw or semiprocessed industrial material.) In the following table these countries are grouped according to the values of the index numbers in the first month of 1927:

(1913 = 100)

Country	Index, January, 1927	Country	Index, January, 1927
New Zealand	151	Italy, gold prices	136
United States	145	Germany	132
Canada	143	Sweden	132
United Kingdom	141	Holland	131
South Africa	[a]139	France, gold prices	123
Belgium, gold prices	[b]136		

[a] Base, January, 1914. [b] Base, July, 1914.

[4] Extensive use is made in the present study of figures which measure the average annual rates of change in economic series. Each of these figures is obtained from the value r, derived when a curve of the type $y = ar^x$ is fitted to the series in question. This is a curve which appears as a straight line on ratio paper. In evaluating r, use has been made of the mean value table constructed by Glover (*Tables of Applied Mathematics*, Ann Arbor, Mich., 1923, p. 468).

to −3. In terms of gold prices only four of the 19 countries listed in the table showed rising levels of wholesale prices between 1922 and 1927. In fifteen countries wholesale prices declined, the rate of decline ranging from −0.1 to −6.5 per cent per year. The most pronounced declines occurred in the Scandinavian countries, Czechoslovakia, Switzerland, and India. Prices were approximately stable in Spain, Canada, the United States, Australia, and South Africa, though the tendency was slightly downward in the last three of these.

TABLE 2.—RANK OF 19 COUNTRIES ACCORDING TO AVERAGE ANNUAL RATE OF CHANGE IN INDEX NUMBERS OF WHOLESALE PRICES, 1922–1927[a]

Country	Average annual rate of change 1922–1927	Country	Average annual rate of change 1922–1927
	Per cent		*Per cent*
Belgium	[b]+16.4	New Zealand	−1.9
France	[c]+14.1	Great Britain	−2.4
China	+ 2.8	Japan	−2.9
Italy	[d]+ 2.2	Sweden	−3.2
Spain	+ 0.3	Switzerland	−3.8
Canada	+ 0.2	Czechoslovakia	−5.2
United States	− 0.1	India	−5.6
Australia	− 0.2	Denmark	−6.2
South Africa	− 0.7	Norway	−6.5
Netherlands	− 1.5		

[a] The index numbers from which these measures are derived are those described in the footnote to Table 1, with the following exceptions and additions: China, Bureau of Markets, Treasury Department, Shanghai, 147 commodities; Italy, Chamber of Commerce, Milan, 125 commodities; Spain, Institute of Geography and Statistics, 74 commodities; Switzerland, Dr. Lorenz, 71 commodities; Czechoslovakia, Central Bureau of Statistics, 69 commodities; India, Labor Office, Bombay, 42 commodities; Norway, Economic Review, 100 commodities.

[b] In gold prices, −3. [c] In gold prices, −2.1. [d] In gold prices, +1.5.

It is clear that during the years which have elapsed since the drastic liquidation of 1920–21 the general drift of world prices has been downward. Belgium and France have resisted this tendency by the emission of paper currency, and China seems not to have felt it. In half a dozen countries the net movement has been slight, while in 10 of the 19 countries listed the decline has proceeded at a rate of 1.5 per cent a year, or greater.

This movement stands in sharp contrast to the trend of wholesale prices in the chief industrial countries between 1896 and 1913. During this period, wholesale prices in the United States rose at an average annual rate of 2.3 per cent; in Great Britain the rate of increase was 1.7 per cent a year, while in Germany prices advanced at a rate of 1.8 per cent each year. The declining tendency observed in recent years has, of course, been a factor of great importance in the postwar economic situation. The wide extent of the decline indicates how pervasive has been the influence of the forces working toward lower gold prices.

Postwar Price Movements and Business Processes in the United States—A General Survey.—Price movements have no particular significance as detached phenomena. They must be considered in relation to general industrial movements and business processes. Recent price movements should be studied, therefore, in relation to general economic tendencies of the postwar period. In this brief survey, we may disregard month-to-month and year-to-year fluctuations and center attention on the persistent tendencies which have characterized this period.[5]

The measure most convenient for the comparison of such tendencies among miscellaneous economic series is the average annual rate of change, which was employed in Table 2. Certain of the distinctive features of the postwar period are summarized in Table 3.

TABLE 3.—ECONOMIC MOVEMENTS IN THE UNITED STATES, 1922–1927

Series[a]	Average annual rate of change 1922–1927
	Per cent
Primary production	+ 2.5
Production of manufactured goods	+ 4.0
Ton-miles of freight carried	+ 4.0
Employment in factories	− 0.7
Factory payrolls	+ 1.7
Per capita earnings, factory employees	+ 2.4
Wholesale prices, all commodities	− 0.1
Wholesale prices, products of American farms in raw state	+ 1.2
Prices of commodities at the farm	+ 1.1
Wholesale prices, nonagricultural products	− 1.8
Profits, industrial corporations	[b]+ 9.0
Dividend payments, industrial and miscellaneous corporations	+ 6.8
Prices, industrial stocks	+14.1

[a] The indexes from which the measures in this table are derived are described in later sections of this chapter.

[b] Computed from data for the period 1923–1927.

The first three indexes reflect the sustained increase in the physical volume of production, which has been the basic factor in the economic well-being characteristic of this postwar era in the United States. Disregarding cyclical and other fluctuations, the volume of primary production (the output of raw vegetable, animal, forest, and mineral products)

[5] Strictly speaking, the period 1922–1927 is too brief to justify the use of the word "trend." Nevertheless, the purposes of the present investigation are served by measures of the tendencies which have been evident during the fairly well-defined period beginning in 1922. It is possible that certain of these apparent trends will be reversed in the near future, but it is the tendencies which are measured by the figures in Table 3 which have given this postwar period its characteristic economic features.

has gone up at an average rate of 2.5 per cent a year. The volume of manufacture has increased at a rate of 4 per cent a year, and freight movements (measured in ton-miles) have increased at the same rate.[6] (The rate of growth of population during this period has been about 1.4 per cent a year.) But accompanying this increase has come a definite decline in the volume of manufacturing employment, a decline at the rate of 0.7 per cent a year. Here is one of the anomalies of the postwar situation—increasing production with declining employment. This condition is at least in part explained by the next two figures. In the face of declining employment, factory pay rolls have gone up at a rate of 1.7 per cent a year, and per capita earnings of factory employees have increased at a rate of 2.4 per cent a year. (Employment, pay roll, and per capita earnings figures relate to identical establishments.) Output per man in manufacturing establishments has advanced at a rate of approximately 3.5 per cent a year[7] during the period 1922–1927, and it is, presumably, this gain in output which has permitted the increase in pay rolls to accompany declining employment.

The next set of figures in Table 3 relates to price movements, and here again we find a peculiar feature of the postwar economy. The increase in production and the changes which have been noted in factory employment and in per capita earnings have accompanied a slightly declining general price level. This decline has been felt chiefly by nonagricultural products, which have dropped at a rate of 1.8 per cent a year. Farm products have risen in price, at a rate slightly above 1 per cent a year. This is true both of prices at the farm and of prices of raw farm products in wholesale markets.

The summary account of postwar tendencies which is provided by these figures is completed by the last three measures in Table 3. Here are shown the remarkable increase in the profits of industrial corporations (at a rate of 9 per cent a year), the somewhat smaller increase in dividend payments, and the unprecedented advance in the prices of industrial stocks (at a rate of 14.1 per cent a year), an advance which has materially exceeded the gain in dividend payments and the increase in profits.

[6] The significance of these measures is, of course, dependent upon the adequacy of the index numbers from which they are derived. All the index numbers represented in the above table are based upon comprehensive data, and there is no reason to doubt that they give a substantially correct account of economic developments during this period. It may be noted that the difference between the rates of increase in primary production and in the volume of manufacture is not a necessary indication of inconsistency. Many primary products are consumed in a raw state. Moreover, the various raw materials enter in different degrees into manufacturing operations. Thus the production of raw minerals, most of which are subject to processing operations, increased at an average annual rate of 5.7 per cent during this period, a figure greatly exceeding the corresponding measures for the other classes of raw materials.

[7] This figure is based upon Dr. Wolman's statistics (Chap. VI).

Here, then, are certain of the broad features of the postwar economic situation. It will be the task of subsequent sections to break up certain of the averages upon which the above measures are based, and to examine in greater detail the movements of prices and of other economic series.

I. PREWAR PRICE TENDENCIES IN THE UNITED STATES[8]

Postwar price movements in the United States can be best interpreted in the light of tendencies which prevailed during the period preceding the war. The price revolution which occurred between 1914 and 1921 was an incident, though a violent one. The effects of this revolution have not yet entirely worn off, but, for an understanding of enduring tendencies in American economic life, it is probable that more is to be learned from a study of prewar movements than from an analysis of conditions during the disturbed years following 1914.

Among the conditions and tendencies in the field of prices which gave to the two decades preceding the war their distinguishing economic characteristics, the following were of major importance.[9]

1. A rising price level.
2. A considerable degree of internal disturbance in price relations, a degree of disturbance which tended to decline.
3. Relatively high variability of prices of individual commodities, marked again by a tendency to decline.
4. The existence, between 1896 and 1913, of clearly defined trends in the prices of most commodities at wholesale and in certain prices in other fields, trends which differed materially as among different elements in the price system. (This point will be discussed in a later section.)

The rising tendency in the level of prices during the two decades prior to the war, a tendency shared by every important commodity group in the United States, provided one of the most fundamental of the conditions under which business men of that era worked. It affected manufacturing methods and buying and selling habits, and was reflected in numerous business practices which business men found hard to change when conditions were altered. But the economic consequences of a rising price level have been discussed in considerable detail, and require no elaboration here.

[8] Some of the materials presented in this and the following sections have been published in *The Behavior of Prices*, National Bureau of Economic Research, 1927, and in a paper by the author on "Postwar Prices and Prewar Trends," *Proceedings* of the American Statistical Association, 1928. This paper has been drawn upon freely in the preparation of the present section of this chapter.

[9] These were not necessarily causal factors. Certain of the price conditions noted may merely have reflected other economic conditions.

The general price index does not tell the whole story of the main price movements of this period. Such an index measures the intensity of the force, or combination of forces, which is affecting the purchasing power of the dollar. There are many specific price-making forces which affect, primarily, the prices of individual commodities. These forces operate to change individual commodity prices unequally, and to prevent the prices of individual commodities from accommodating themselves promptly to changes in the purchasing power of the dollar. The influence of these disruptive forces is reflected in the dispersion of prices. The less direct the incidence of the force which is acting upon the price level, and the greater the relative importance of specific price-making factors, the more widely dispersed will prices be. These disruptive forces possess considerable economic significance, for every inequality of movement affects the buying and selling relations upon which the movement of goods depends. Every inequality of movement introduces some element of instability into the price system.

The index employed in measuring the dispersion of prices defines, in percentage form, the approximate limits of the zone within which would fall 50 per cent of the price relatives at a given date, and on a given base.[10] Thus a value of 10 for a given date means that, on that date, approximately half the price relatives deviated from the geometric mean of all the relatives by less than 10 per cent. Such measures, computed from annual link relatives, weighted, for the period 1891–1927, are given in Table 4, together with geometric means of the link relatives.[11]

Two facts concerning these measures are of immediate significance. The first is that this prewar period, particularly the early part of the period, was marked by a relatively high degree of dispersion, that is, by relatively severe disturbances in price relations.[12] The second point of

[10] This measure is the antilogarithm of a fractional part (.6745) of the logarithmic standard deviation. The logarithmic standard deviation was first used as a measure of dispersion by Professor Irving Fisher.

[11] The commodities employed are those for which wholesale price quotations are published by the United States Bureau of Labor Statistics. The weights are based upon the values of the quantities marketed during the period 1920–1923.

[12] Severe, that is, relatively to similar disturbances at other times and in other lands. That it was severe during the early part of this period, in comparison with disturbances in other periods, is shown by certain measures, not given above, defining the degree of dispersion of fixed base relatives in different periods. The dispersion, in 1902, of relatives on the 1891 base is measured by an index of 17.6; in 1913 the index of dispersion of relatives on the 1902 base was 14.1; in 1926, the index of dispersion of relatives on the 1913 base was 17.4. (The figures for intermediate years of this last period were considerably higher, but at the end of the period the dispersion was less than it was in 1902, on the 1891 base.)

That the disturbance was severe in comparison with similar disturbances in other lands is suggested by certain figures of Lucien March (*Metron*, Vol. 1, No. 4,

TABLE 4.—GEOMETRIC MEANS AND MEASURES OF DISPERSION COMPUTED FROM LINK RELATIVES OF WHOLESALE PRICES, 1891–1927

Year	Number of price series	Geometric mean	Index of dispersion	Year	Number of price series	Geometric mean	Index of dispersion
1891	195	100.0	10.6	1910	205	102.9	7.9
1892	195	93.8	7.3	1911	205	94.5	8.7
1893	195	101.8	8.3	1912	205	106.8	7.3
1894	195	89.8	7.9	1913	205	101.1	8.4
1895	195	101.3	9.8	1914	391	97.9	7.4
1896	195	95.3	9.8	1915	391	101.1	10.6
1897	195	100.6	9.7	1916	391	125.8	13.7
1898	195	102.6	7.7	1917	391	138.6	12.4
1899	195	107.1	10.5	1918	389	111.7	14.2
1900	195	108.5	8.4	1919	389	106.8	11.9
1901	195	99.2	7.9	1920	391	110.2	15.7
1902	195	107.3	8.6	1921	391	65.4	18.3
1903	205	100.8	9.2	1922	391	101.0	11.7
1904	205	99.6	10.2	1923	390	105.0	11.0
1905	205	100.6	7.4	1924	390	97.4	8.3
1906	205	103.6	7.7	1925	387	105.8	11.5
1907	205	106.4	5.7	1926	385	94.5	8.9
1908	205	96.0	8.7	1927	372	97.1	9.2
1909	205	106.1	7.6				

importance is that during the 24 years prior to the war there was a sustained downward tendency in the degree of dispersion of link relatives. The disturbances of which such dispersion is a reflection were definitely

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p. 83). Using relatives on the 1890–1899 base in each case, March gives the following figures:

Number of commodities	Country and year	Standard deviation of price relatives
203	United States, in 1909	31.8
55	France, in 1913	22.5
42	Great Britain, in 1913	20.0

Although the period was four years longer for France and Great Britain than for the United States (a condition which would tend to increase the dispersion), the degree of dispersion was materially greater in the United States than in either of these countries. Differences in the commodities used, and in the number of quotations employed, lessen the comparability of the results, but the same general tendencies would probably be revealed by other samples.

Both these examples relate, not to year-to-year dispersion of the type referred to in the text, but to the dispersion of prices over much longer periods. The records of the war years support the reasonable assumption that exceptional disturbance of fixed base relatives will be associated with high dispersion of link relatives.

diminishing. I shall discuss the economic significance of these facts in connection with the next point considered.

The third important characteristic of prewar price behavior is the high variability of the prices of individual commodities. Such variability may not be registered at all in changes in the price level. Though price-level changes and the variability of individual prices are not unrelated, the one furnishes no accurate index of the other. For each of more than 200 commodities, we have, for each year from 1890 to 1927, a measure of the variability of its prices within the year.[13] The averages of these annual measures are given in Table 5.

TABLE 5.—MONTHLY VARIABILITY OF WHOLESALE PRICES. AVERAGES COMPUTED FROM MEASURES OF PRICE VARIABILITY FOR INDIVIDUAL COMMODITIES, 1890–1927

Year	Number of price series	Arithmetic mean of measures of variability	Year	Number of price series	Arithmetic mean of measures of variability
1890	204	4.8	1909	214	4.6
1891	204	4.4	1910	214	4.3
1892	204	4.5	1911	214	4.3
1893	206	4.9	1912	214	4.6
1894	206	4.6	1913	213	3.7
1895	206	6.3	1914	214	4.4
1896	206	4.7	1915	214	5.9
1897	206	4.8	1916	214	8.7
1898	206	4.1	1917	214	10.6
1899	206	6.0	1918	213	7.3
1900	206	5.5	1919	212	9.7
1901	205	4.3	1920	214	10.8
1902	214	4.7	1921	214	8.5
1903	214	4.8	1922	213	6.5
1904	214	4.1	1923	214	4.9
1905	214	4.5	1924	213	5.4
1906	214	3.5	1925	211	4.7
1907	214	4.5	1926	211	4.2
1908	214	4.7	1927	209	4.7

The points noted in connection with the dispersion of prices appear to be true of these measures of price variability. The wholesale prices of individual commodities in the United States during this period, as a whole, were highly variable;[14] this variability was tending to decline.

[13] This measure is the mean deviation, expressed as a percentage of the mean price for the year.

[14] We have, unfortunately, no similar set of averages for other countries covering this period, but some indication of the relative variability of American prices and prices in other countries is afforded by a comparison of measures of variability relating to individual commodities. In 24 out of 31 such comparisons of individual price series in the United States and in other countries (Great Britain, France, and Ger-

A consideration of these measures of dispersion and of price variability throws some light on the economic characteristics of the prewar period.

1. The prices of individual commodities were subject to relatively abrupt changes from month to month and from year to year. (There were, of course, many individual exceptions to this general condition.) These changes introduced a considerable degree of uncertainty into business operations, and enhanced the speculative features of business operations.

2. The relatively high degree of dispersion from year to year represents a condition of rapidly changing price relations. The specific price-making forces which affected individual commodities differed materially in their intensity; the disruptive forces which tended to alter existing price relations were relatively strong. Here, again, we have a condition which introduces uncertainty into business dealings, and intensifies the speculative element in business.[15]

3. The preceding points may be summed up in the statement that there was a high degree of price instability in the prewar era. Individual prices and the relations among the prices of individual commodities were both relatively unstable.

4. Finally, and perhaps most important, during the quarter century preceding the war these measures of instability showed a definite tendency to decline. The variability of individual commodity prices was diminishing, and there was less disturbance in price relations. The movement toward greater stability of individual prices and of price relations was broken and uneven, but it is clearly present as a sustained trend.[16] This downward trend is the more significant in that it accompanied a rising price level.

In the high variability of individual prices prior to the war, and in all that that implies, we have, I think, one of the most significant of the conditions which gave to prewar economic life its characteristic tone, and in the downward trend of this variability we have one of the most

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many), American prices were found to be more variable. Again, measures of price variability for seven important commodities (coal, iron, sugar, silk, rice, barley, and wheat) in five countries, for the period 1890–1913, were averaged. The average was highest for the United States, with Japan, France, Great Britain, and Germany coming next in order. These are only scattered cases, yet they indicate that our prewar price system was characterized by a relatively high degree of variability of individual commodity prices.

[15] Points 1 and 2 represent different aspects of essentially the same phenomena. The first depicts the condition with reference to the behavior of individual commodities; the second involves the relations among commodity prices and the degree of difference in their changes.

[16] This trend is apparent not only in the two sets of measures given above, but also in certain measures of the frequency of changes in the prices of individual commodities which, because of space limitations, can not be here discussed.

important of the tendencies which marked the economic development of this period. The conditions of high price variability and marked disturbance in price relations offer opportunities to business men for those conjunctural profits which result from faulty economic adjustments and temporary dislocations. A rising price level, coupled with variable individual prices, represents a happy hunting ground, indeed, for the speculative elements in the business world.[17]

II. THE BEHAVIOR OF PRICES IN THE UNITED STATES, 1922–1928: GENERAL MEASURES

The upward trend of the price level during the period 1896–1913, a movement which carried the general index up by 2.3 per cent each year, gave to that period certain of its most pronounced economic characteristics. It is apparent from the data in Table 2 that the trend of world prices, in wholesale markets, has been declining since 1922, and there is no present evidence that the prewar rise will be resumed. In the United States there was a slight downward movement (at an average rate of one-tenth of 1 per cent a year) between 1922 and 1927, but the degree of departure from actual stability has been negligible. The significance of this approximate stability need not be discussed here, except to emphasize its obvious bearing upon the buying and selling operations of business men. The world in which the business man of to-day functions is different in many respects from that in which business was done during the two decades prior to the war. Perhaps the most important of these differences is found in the changed trend of the level of prices.

War-time developments gave a sharp check to the downward trend in the variability of individual commodity prices which was in evidence before the war. The range of fluctuations of individual prices was unprecedentedly large during the war years, and this high variability persisted even after the recession of 1920–21. The average of all the individual measures of variability for the six years 1922–1927 was 5. The average for the 14 years from 1901 to 1914 was 4.4. But to judge postwar conditions by this average alone is to ignore the significant decline in price variability in recent years as shown by the averages of the variability measures for individual commodities. From 1920 to 1927, the average declined from 10.8 to 4.7. (See Table 5 for the figures for intervening years.)

It is clear that the prewar tendency toward greater stability in the prices of individual commodities is still present. The average for 1927 is about equal to that prevailing at the close of the prewar period. We may, of course, expect fluctuations in these annual averages, with move-

[17] There is, it is true, a dark side to the picture, for highly variable prices will present opportunities for conjunctural losses, as well as for profits.

ments above the 1927 figure, but the existence of the declining trend in price variability before the war strengthens the assumption that the degree of variability to be expected in the future will be no greater than that which prevailed at the end of the prewar period, with some possibility that the downward movement will continue. If we may anticipate approximate stability in the price level in the future, the expectation of greater stability in the prices of individual commodities is strengthened.[18]

Recent movements of the index of dispersion tell somewhat the same story as do the averages of the variability measures. The well-defined downward movement in the degree of year-to-year dispersion which was in evidence prior to the war was reversed during the disturbances of the period from 1915 to 1921. (See Table 4.) Since 1922, however, the average degree of dispersion has been much lower, although somewhat above the prewar average. The average for the years 1922–1927 is 10.1; that for the years 1901–1914 is 8.7. The figures for 1924, 1926, and 1927 represent a degree of year-to-year disturbance about equal to that which prevailed during the decade before the war.

In respect, then, to the internal disturbances which are defined by the above measures, we appear to stand to-day approximately where we did in 1913. The excessive disturbances of the war years served only temporarily to check the tendencies toward increased stability of individual commodity prices and of internal relations among prices which were operative before the war. In the last several years, there have been fewer of those abrupt changes in prices and in price relations which characterized the nineties of the last century, and which gave the war and immediate postwar years their distinctive business flavor.

These tendencies toward price stability, which have so definitely reasserted themselves after the disturbances of the war years, will, if they persist, materially affect the economic complexion of the years before us. All that has been said above concerning the slow change that was taking place in the price conditions under which business was transacted during the quarter century preceding the war may be applied to the present and future. A tendency toward greater stability of prices and of price relations must involve some change in the direction in which business men look for profits. Something of the speculative element goes out of business when such a tendency prevails. Profits made from the fluctuations of individual commodity prices, and from changes in the relations among prices, tend to diminish. The high conjunctural profits and the great losses which go with extreme fluctuations in the prices of individual commodities alike tend to disappear. Business and prices

[18] Changes in the purchasing power of the dollar are not, of course, the sole factor affecting the movements of individual commodities, but this factor becomes of dominant importance during periods of violent change in the price level.

both become more stable. There is evidence that our economic system is moving in this direction.[19]

In this general survey, attention should be given to the cycles which have been reflected in prices and in related economic series, as well as to general tendencies prevailing during this period. Certain postwar tendencies in industry have been so pronounced that they have in part overshadowed the cyclical fluctuations, and in much of the current discussion it is these tendencies to which chief attention has been given.[20] Important as these have been, and important as they will be if they continue, the persistence of cyclical fluctuations is of equal importance.

Such fluctuations in prices and in several related series during postwar years are shown by the curves in Charts 1 to 15. These charts have been constructed in such a way as to reveal cyclical movements, rather than trends. Each of these curves portrays changes in the values of monthly relatives, these being secured by expressing each monthly value of the series in question as a percentage of its value at a date 12 months preceding.[21]

In Charts 1 to 5 appear curves, representing the movements of 12-month link indexes of this type during the period 1920–1928. The measures plotted are derived from indexes of general wholesale prices,

[19] Such tendencies, it is understood, operate slowly, and are subject to numerous interruptions. New inventions, new processes, may offset these tendencies for shorter or for longer intervals.

[20] As to the nature of these tendencies, more is said in the several sections next following.

[21] Thus the price (or production) index for January, 1920, is expressed as a percentage of the index value for January, 1919; the index value for February, 1920, is expressed as a percentage of the index value for February, 1919, and so on. These charts thus differ materially from the usual type, on which are plotted absolute values or relatives on a constant base, and they call for a somewhat different interpretation. Seasonal fluctuations, if they are constant, will not appear in the curve. Again, the measurement of changes with reference to a date 12 months preceding means that the curve of such an index fluctuates about the base line (*i.e.* the 100 line). When the curve crosses the 100 line, it means, of course, that the series has precisely the same value as it had 12 months before. Points above the 100 line represent rising values of the original series. If the curve is above the 100 line and rising, it represents a series which is increasing at an increasing rate; if it is above the 100 line and falling, it represents a series which is increasing at a decreasing rate. Changes below the 100 line are to be interpreted in a similar fashion. The effect of a consistent trend is not, of course, eliminated, but it appears in a form somewhat different from that to which we are accustomed. An upward trend serves to increase the number of entries above 100, intensifying and lengthening the swings of the index above the base line. A downward trend would have the reverse effect. Such an index, based on 12-month link relatives, has distinct advantages in the following of cyclical fluctuations. Its use conforms with the common practice of comparing monthly values with the values prevailing 12 months before. (A more detailed discussion of the nature of measures of this type will be found in *The Behavior of Prices*, National Bureau of Economic Research, 1927, pp. 247–251.)

CHART 1.—FLUCTUATIONS IN COMMODITY PRICES, AT WHOLESALE

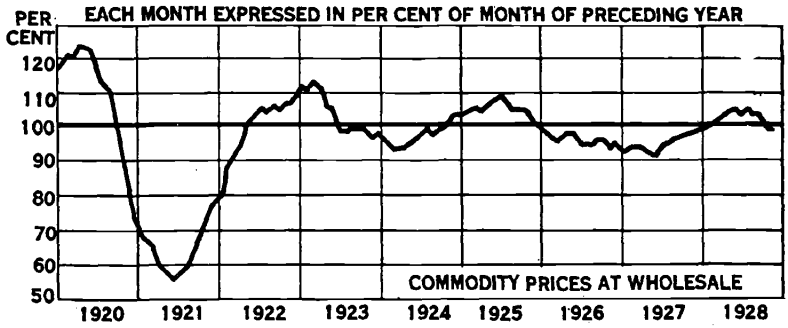


CHART 2.—FLUCTUATIONS IN PRICES OF NONAGRICULTURAL PRODUCTS AT WHOLESALE

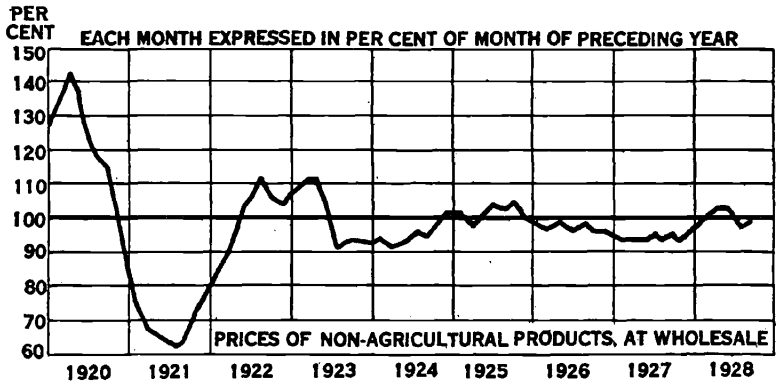


CHART 3.—FLUCTUATIONS IN VOLUME OF MANUFACTURING PRODUCTION

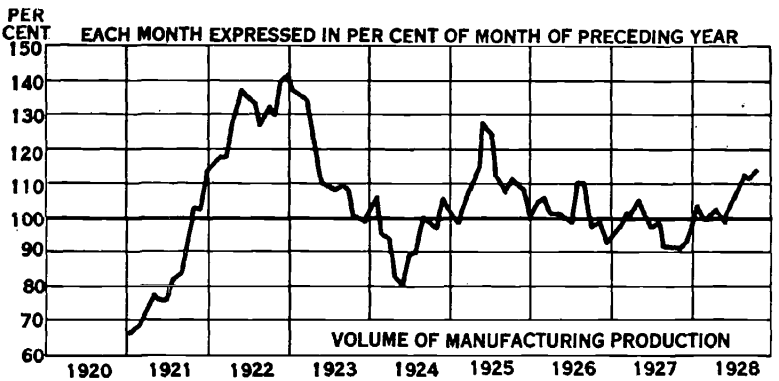


CHART 4.—FLUCTUATIONS IN VOLUME OF INDUSTRIAL EMPLOYMENT

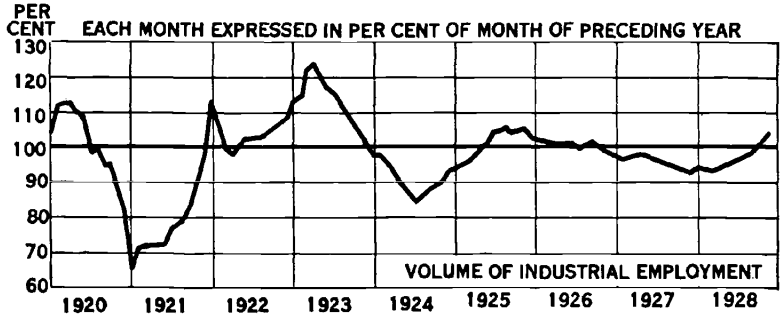


CHART 5.—FLUCTUATIONS IN PAY ROLLS OF MANUFACTURING INDUSTRIES

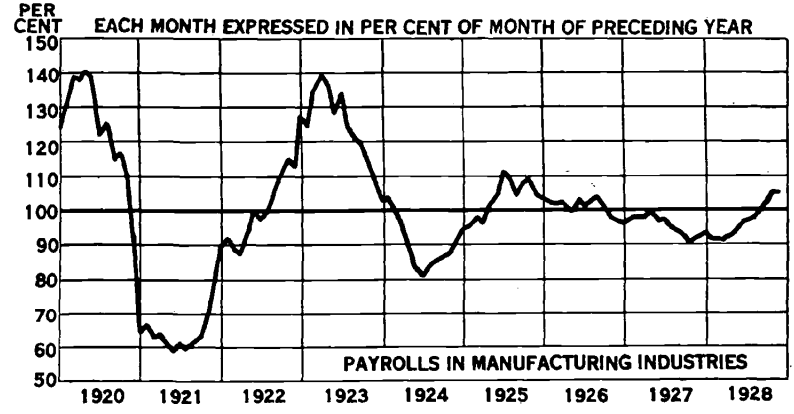


CHART 6.—FLUCTUATIONS IN COMMODITY STOCKS

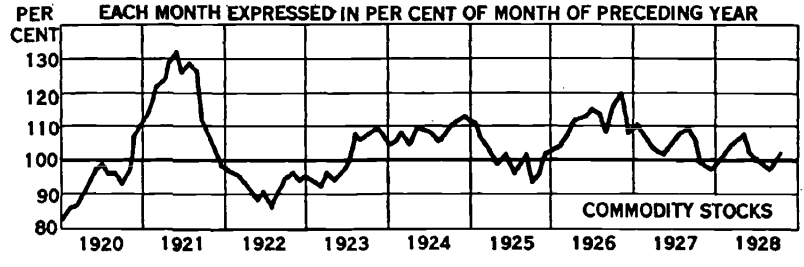


CHART 7.—FLUCTUATIONS IN UNFILLED ORDERS

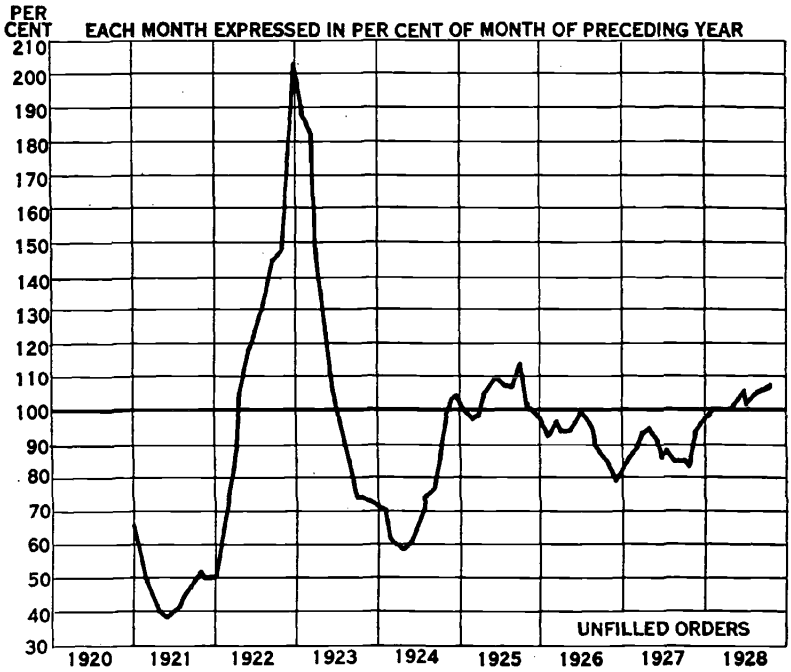


CHART 8.—FLUCTUATIONS IN VOLUME OF TRADE

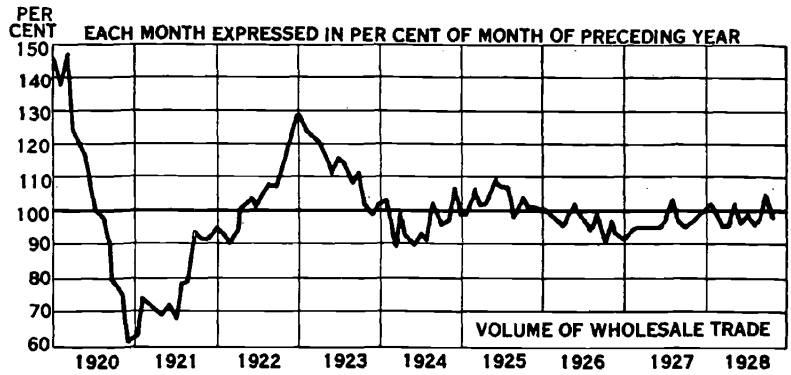


CHART 9.—FLUCTUATIONS IN PRICES OF FARM PRODUCTS

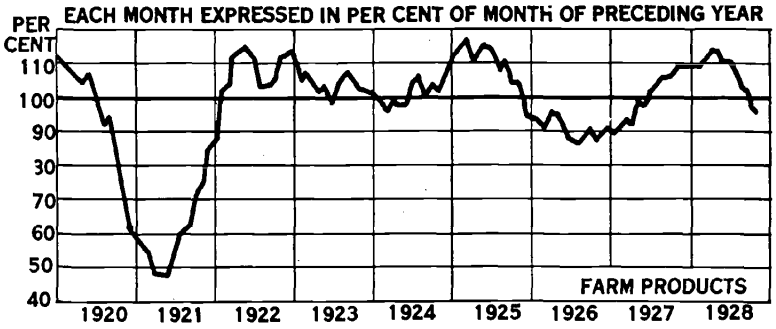


CHART 10.—FLUCTUATIONS IN PRICES OF FOODS

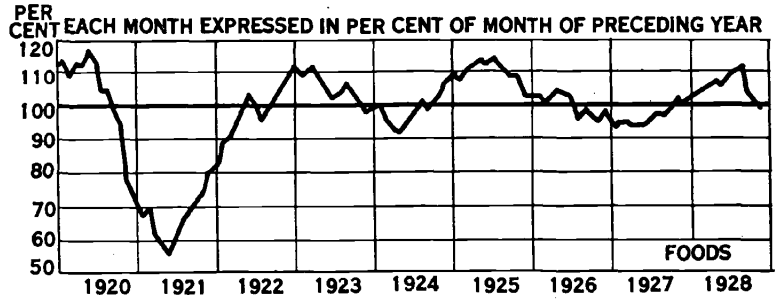


CHART 11.—FLUCTUATIONS IN PRICES OF HIDES AND LEATHER PRODUCTS

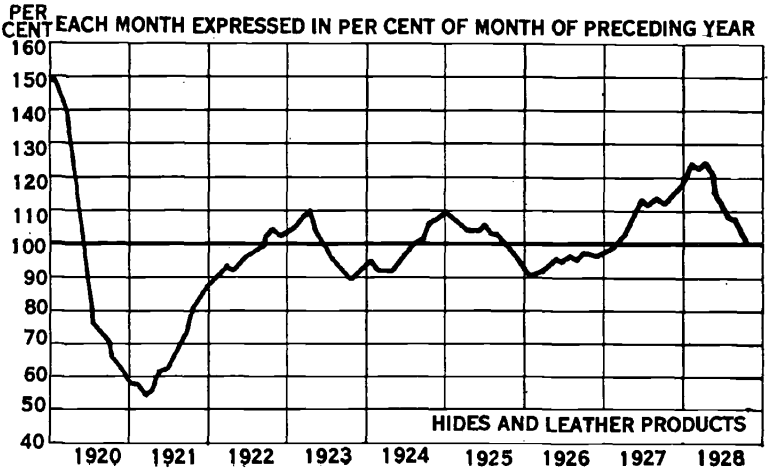


CHART 12.—FLUCTUATIONS IN PRICES OF TEXTILE PRODUCTS

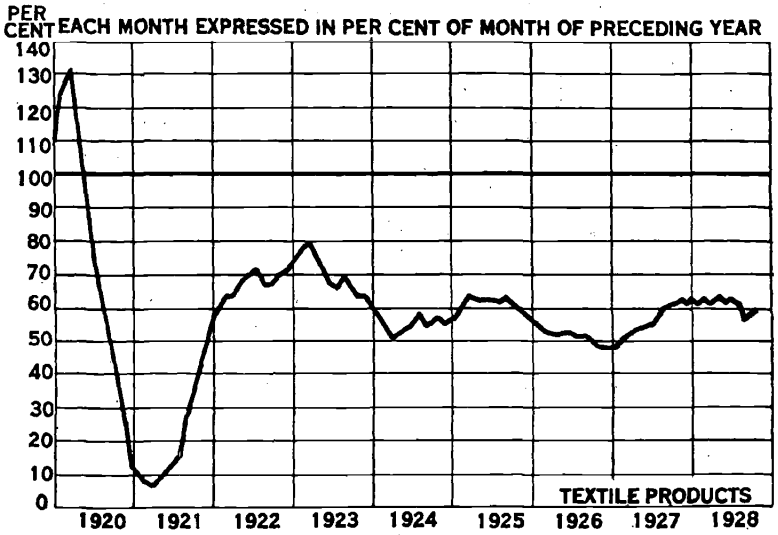


CHART 13.—FLUCTUATIONS IN PRICES OF FUEL AND LIGHTING

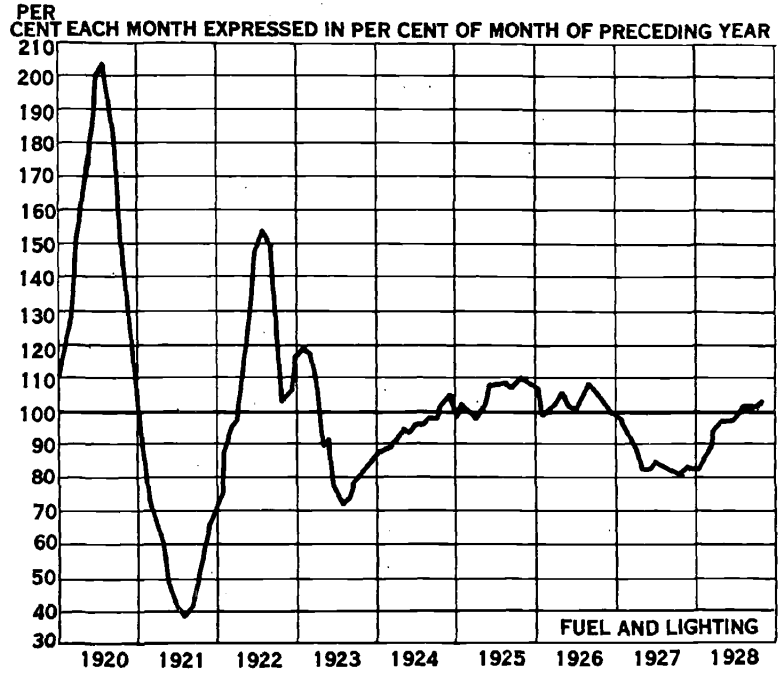


CHART 14.—FLUCTUATIONS IN PRICES OF METAL AND METAL PRODUCTS

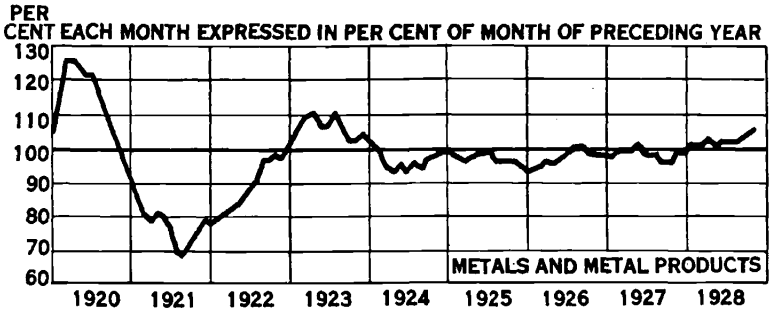
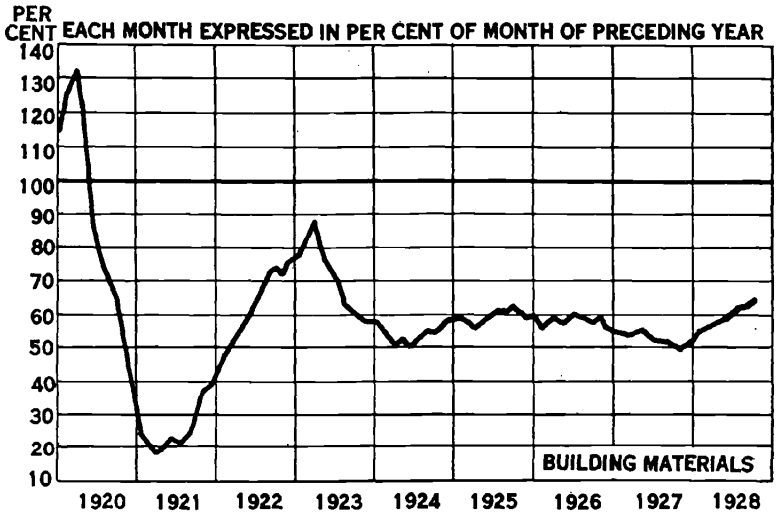


CHART 15.—FLUCTUATIONS IN PRICES OF BUILDING MATERIALS



of the prices, at wholesale, of nonagricultural (*i.e.*, industrial) commodities, of manufacturing production, of industrial employment, and of pay rolls in manufacturing industries. The recession of 1920–21 and the subsequent business recovery are clearly apparent in all the indexes.[22] Thereafter, we find in all series a clear cyclical peak in 1923, a recession in 1924, a peak in 1925, and a slow but appreciable decline from 1925 to 1927. The index of manufacturing production has been above the base line during almost all of the last three and a half years, which means that the trend of such production has been almost unbrokenly upward. But the *rate* of such advance has declined appreciably since the peak of the cycle in 1925, and it is in this decline that the influence of cyclical forces has been apparent. All the other series,

[22] The index of manufacturing production shows only the recovery since, in this link form, it goes back only to the beginning of 1921.

notably the prices of industrial commodities at wholesale, have suffered more appreciable declines in their absolute values.

In Charts 6 to 8 there are shown similar curves relating to commodity stocks, unfilled orders, and the volume of wholesale trade, and in Charts 9 to 15 there are plotted, in the same form, price indexes of a number of commodity groups, at wholesale.[23]

III. TRENDS OF PRICE GROUPS, PREWAR AND POSTWAR

Reference has been made to the fact that between 1896 and 1913 there existed material differences among the price trends of different commodities, and it was suggested that a key to certain of the distinctive economic characteristics of the prewar period could be found in these differences. Thus, during the 18-year period between 1896 and 1913, rosin rose in price at an average annual rate of 10.2 per cent, print cloths rose at a rate of 2.8 per cent, and wood alcohol declined at a rate of 3.4 per cent a year. During the period 1922–1927, hogs rose in price at an average annual rate of 6.9 per cent a year, while the price of pig iron declined at a rate of 7.3 per cent a year. It is such differences which reflect enduring changes in economic relations. The nature and economic significance of these differences may be best appreciated when attention is shifted from individual commodities to important commodity groups, and it is in the differences among groups, in respect to their price trends, that our present interest lies. The discussion of recent price tendencies may be introduced by a brief summary of the movements of prices during the two decades preceding the war.

The relative movements of the commodity groups for which the Bureau of Labor Statistics has constructed index numbers for prewar years are shown in Table 6.

TABLE 6.—PREWAR TRENDS OF COMMODITY PRICES, AT WHOLESALE
(Groups of the United States Bureau of Labor Statistics)

Commodity groups	Average annual rate of price increase, 1896–1913	Commodity groups	Average annual rate of price increase, 1896–1913
	Per cent		*Per cent*
Farm products	+3.4	Cloths and clothing	+1.8
Building materials	+2.4	House furnishings	+1.4
Foods	+2.3	Metals and metal products	+0.8
All commodities	*+2.3*	Chemicals and drugs	+0.5
Fuel and lighting	+2.1		

These measures afford one view of the fundamental changes that were taking place during the years preceding the war. The sustained improve-

[23] The group index numbers plotted are selected from those computed by the United States Bureau of Labor Statistics.

ment in agricultural conditions is reflected in the margin of more than 1 per cent between the rates at which farm products and all commodities were rising in price. Five of the eight groups rose less rapidly in price than did the all-commodities index. That is, fuels, clothing, furnishings, metal products, and chemicals and drugs were becoming relatively cheaper during this period.

Additional information concerning prewar economic tendencies may be gleaned from other classifications of commodities.

TABLE 7.—PREWAR TRENDS OF COMMODITY PRICES, AT WHOLESALE
(Various groupings)

Commodity group	Number of commodities	Average annual rate of price increase, 1896–1913[a]
		Per cent
Cultivated products	128	+2.3
Noncultivated products	98	+1.5
Products of American farms	117	+2.4
All other commodities	109	+1.5
Raw materials	49	+2.6
Processed materials	177	+1.8
Foods	67	+2.5
Nonfoods	159	+1.7
Producers' goods	115	+1.9
Consumers' goods	111	+1.9
Forest products	22	+3.3
Animal products	51	+2.4
Cultivated vegetable products	74	+2.1
Mineral products	70	+0.9
Domestic products	161	+2.0
Foreign products	13	+1.6
Products from both domestic and foreign sources	52	+1.7
All commodities	226	+1.9

[a] The measures in this table have been derived by averaging equally weighted rates of change in the prices of individual commodities. The commodities included are those for which the Bureau of Labor Statistics compiles and publishes price quotations. The difference between the rates of change for "all commodities," as given in this and in the preceding table, is due chiefly to the fact that one is the average of measures for individual commodities, while the other is derived from an index number.

The classifications upon which these measures rest differ materially, it may be noted, from those employed in the construction of currently published index numbers, even from certain ones having the same group names. This accounts for certain differences between the rates here given and those cited in the paper to which reference has been made, "Postwar Prices and Prewar Trends." In a later publication of the National Bureau of Economic Research, detailed information will be given concerning the present classifications.

Certain fairly sharp differences are revealed in Table 7. Products of cultivation were becoming relatively dearer in prewar years, while noncultivated products were becoming progressively cheaper in price.[24] Raw

[24] The comparison runs in relative terms, of course. The value of a commodity, with reference to other commodities, was declining if the rate of its price increase were less than the average increase for all commodities.

materials were rising in price more rapidly than processed goods. Foods were becoming dearer and nonfoods cheaper, in relative terms. The greatest differences are found in the next to the last division of the table. Forest products were rising in price at a relatively rapid rate, while the prices of animal products and of cultivated vegetable products were gaining on the general average. The relative value of mineral products, in terms of all commodities, was declining at a rate of 1 per cent a year.

Much information is concealed by such broad averages as the above. Within each of the groups there distinguished, we may expect to find differences among individual commodities and among minor groups. With reference to the farm situation, the trend of the prices of raw farm products is more significant than the movement of the entire group of commodities which are classed as products of American farms. Here we find raw materials rising at a much more rapid rate than processed materials (3.2, as against 2.2). Again, a striking margin is found between the trends of raw minerals and of processed minerals. The raw minerals rose at a rate of 1.8 per cent a year, while the processed goods rose at 0.6 per cent. The value, in terms of other commodities, of processed mineral products declined more rapidly during this prewar period than did the value of any other important commodity group. This progressive cheapening of major industrial products played an important part in the economic development of the United States during this era.

In Table 8 is shown a final picture of prewar movements in the field of living costs and wages.

TABLE 8.—PREWAR TRENDS, COST OF LIVING, AND EARNINGS OF LABOR

Index[a]	Average annual rate of increase, 1896–1913
	Per cent
Cost of living	+1.9
Earnings, all groups of employees	+2.4
Earnings, factory employees	+2.0
Purchasing power of earnings, all groups	+0.5
Purchasing power of earnings, factory employees	+0.1

[a] The indexes of living costs and of earnings from which these measures have been derived are those constructed by Prof. Paul H. Douglas. The rates of change in purchasing power, *i.e.*, in real earnings, are derived from the rates for cost of living and money earnings.

Costs of living were rising, during the two decades before the war, at a rate not materially different from that of wholesale prices. The earnings of all labor, as these are measured by the indexes constructed by Prof. Paul H. Douglas, were rising at a rate of 2.4 per cent a year, while the earnings of factory labor rose at a rate of 2 per cent a year between 1896 and 1913. In terms of purchasing power, or real wages,

the gains of labor are not so impressive. For all workers, the gain was at a rate of one-half of 1 per cent each year, representing a slow but sustained improvement in well-being. The corresponding figure for employees of manufacturing plants is one-tenth of 1 per cent a year. The earnings of these workers barely kept ahead of living costs during this period.

The twenty-odd years preceding the war constituted, from an economic viewpoint, a fairly homogeneous period, a period of rising prices, increasing production, expanding commerce. The brief account preceding has dealt with the tendencies in the field of prices which helped to give to this period its distinctive economic complexion. We may turn now to the period in which our chief interest lies, the period which began with the recovery following the drastic liquidation of 1920–21. We are at a disadvantage in attempting to define the tendencies characteristic of this postwar era, for this period has by no means run its course. There will doubtless be many reversals of present trends before we arrive at a point marking a decisive termination of this era. Nevertheless, it is instructive to consider the tendencies which may now be observed, and to contrast these with the tendencies which were operative before the war.

In Tables 1 and 2 of Appendix B there will be found numerous measures of the price changes which have occurred since 1922. From the groups there represented, certain of the more significant figures may be selected for comment here (Table 9). The first set correspond to the prewar figures shown in Table 6.

TABLE 9.—TENDENCIES AMONG COMMODITY PRICES, AT WHOLESALE
(Groups of the United States Bureau of Labor Statistics)

Commodity group	Average annual rate of change, 1922–1927[a]	Commodity group	Average annual rate of change, 1922–1927[a]
	Per cent		*Per cent*
Foods	+2.3	Building materials	−1.3
Farm products	+1.2	Textile products	−1.5
Hides and leather products	+0.2	Metals and metal products	−1.5
All commodities	*−0.1*	House furnishings	−1.5
Chemicals and drugs	−0.5	Fuel and lighting	−2.7

[a] The index numbers from which these rates of change have been computed are the revised measures, on the 1926 base.

The net movement of the prices of all commodities, at wholesale, has been slightly downward during this period, but the differences between the movements of the major commodity groups have been even greater than those which developed during the prewar era (see Table 6). As for the earlier period, farm products and foods have gained, relatively, while metals, fuels, and house furnishings have lost. Building materials and chemicals and drugs have reversed their relative positions. Of

the nine groups, six have declined (five substantially), two have risen appreciably, and one has remained practically on a level.*

TABLE 10.—TENDENCIES AMONG COMMODITY PRICES, AT WHOLESALE
(Minor groups of the United States Bureau of Labor Statistics)

Commodity group	Average annual rate of change, 1922–1927[a]
	Per cent
Rubber, crude	+16.8
Textile products (other than cotton, silk, and wool)	+ 6.0
Livestock and poultry	+ 5.5
Meats	+ 5.1
Drugs and pharmaceuticals[b]	+ 4.6
Grains	+ 3.5
Essential oils[b]	+ 2.7
Butter, cheese, and milk	+ 1.9
Nonferrous metals	+ 1.9
Crude drugs[b]	+ 1.2
Boots and shoes	+ 0.8
Chemicals	+ 0.6
Leather	+ 0.4
Foods (other than butter, cheese, milk, and meats)	+ 0.3
Cattle feed	+ 0.1
Furnishings	+ 0.1
Woolens and worsted goods	0.0
All commodities	*– 0.1*
Anthracite coal	– 0.2
Paper and pulp	– 0.5
Brick	– 1.1
Farm products, (other than grains, livestock, and poultry)	– 1.2
Structural steel	– 1.4
Hides and skins	– 1.5
Portland cement	– 1.7
Petroleum products	– 1.8
Cotton goods	– 1.8
Lumber	– 1.9
Iron and steel	– 1.9
Furniture	– 3.7
Bituminous coal	– 4.5
Coke	– 5.6
Silk and rayon	– 5.8

[a] The index numbers from which these rates of change have been computed are the revised measures on the 1926 base.

[b] Index numbers of the *Oil, Paint and Drug Reporter*.

* Relative changes in the prices of different commodities are influenced most strongly by the possibilities that exist, with respect to particular commodities, of applying to their production mechanical aids and scientific discoveries. To the ordinary individual, the most significant recent change in price levels is the relative cheapness of those things that can be turned out in quantity by mechanical processes, and the high price of personal service and of those things that can be turned out only by crude hand labor. This differentiation can be seen in travelling from country to country, when it is observed that in mechanically backward countries, those things are relatively cheap which are produced by crude hand labor, and those things are dear which require skilled and highly mechanized production. Note by M. C. Rorty.

These movements reflect the changes which are generally understood to have been characteristic of the postwar period. Farm products have risen in price, while industrial goods have tended to decline. But the figures for these nine major groups leave untold much of the story of the price changes characteristic of this postwar period. More detailed measures, and measures representing classifications other than that employed by the Bureau of Labor Statistics, are needed to supplement those there given. Some of the details of the picture are filled in by the measures in Table 10, defining the average annual rates of change in the index numbers for minor commodity groups, as constructed (with three exceptions) by the Bureau of Labor Statistics.

Here we have, as is to be expected, a much wider range of variation, extending from the crude rubber group, which increased in price at an average rate of 16.8 per cent a year, to the silk and rayon group, which declined in price at an average rate of 5.8 per cent a year. The ranking of groups does not permit such a relatively simple interpretation as did the division of nine major groups. Something of the complexity of the general economic situation is revealed by these detailed figures. The subclasses of certain of the broad groups are found to have differed widely from each other in their price trends during the past six years. Thus we find the general group of textile products broken into four smaller groups, one of which is second from the top, one approximately at the center of the list, one seventh from the bottom, and one at the bottom of the entire list of 32 minor groups. From a study of this table, much may be learned concerning the character of the forces which were affecting economic processes during this period.

Certain of the broader tendencies of the period may be discerned when the general list of commodities is divided into groups on different bases. A number of classifications have been applied by the National Bureau of Economic Research to the commodities in the Bureau of Labor Statistics' list, and from the index numbers thus constructed certain of the measures in Table 11 have been computed.[25]

The various index numbers measuring the movements of agricultural and nonagricultural products agree in showing both an absolute and a relative gain in the prices of the former group.[26]

[25] These index numbers will be published at a later date, and details of the various classifications will be given at that time. The index numbers, from which the rates of change in the present chapter have been computed, are unweighted geometric averages of relative prices, on the 1913 base.

[26] In the discussion of the postwar trends of these groups, one point of some general importance must be borne in mind. The discussion of prewar trends dealt with the period from 1896 to 1913; the treatment of post-war trends is restricted to the period 1922–1927. Developments during the intervening years have been ignored. There is justification for considering developments during the period 1914–1921 as so much water under the bridge, and for neglecting these in attempting to trace postwar

TABLE 11.—TENDENCIES AMONG COMMODITY PRICES, AT WHOLESALE
(Various groupings)

Commodity group	Number of commodities	Average annual rate of price change, 1922–1927
		Per cent
Agricultural products[a]	141	+0.7
Nonagricultural products[a]	263	−1.8
Cultivated products	230	+1.0
Noncultivated products	174	−1.1
Products of American farms	201	+0.7
All other commodities	203	−0.5
Raw materials	106	+1.4
Processed materials	298	−0.4
Foods	136	+2.0
Nonfoods	268	−0.9
Consumers' goods	172	+0.3
Producers' goods	232	+0.0
Animal products	96	+1.2
Cultivated vegetable products	127	+0.5
Mineral products	128	−0.9
Forest products	40	−1.6
Foreign products	34	+3.4
Domestic products	294	−0.4
Commodities from both domestic and foreign sources	76	+0.5

[a] These index numbers are compiled by the Bureau of Labor Statistics. Agricultural products include all the commodities classed as "Farm Products," and "Foods," except that hides and skins, cocoa beans, coffee, copra, fish, pepper, salt, tea, and cocoanut oil are excluded, and bran, cottonseed meal, linseed meal, and mill feed middlings are included. All other commodities are classed as "nonagricultural."

The margin between the two rates of change has been somewhat greater for the period since 1922 than it was during the prewar period, for which figures were given in Table 7. As in the prewar period, raw materials have been gaining, in relation to processed materials, and foods have been rising in relation to nonfoods. For these three major groups, recent tendencies have resembled those prevailing in the earlier period. Animal, vegetable, and mineral products stand also in the same relative positions, but forest products, which in prewar days rose most rapidly, have declined at the sharpest rate in recent years. There has been a slight, but hardly significant, change in the relative positions of producers' and consumers' goods. The price trends of foreign and domestic products have been reversed. Within the last six years, foreign products (a rela-

trends. Yet events during this disturbed period have influenced recent trends. The fact that agricultural prices have risen in recent years, while nonagricultural prices have declined, is in part a result of the more severe recession in agricultural prices in 1920–21. Therefore, although we deal with trends since 1922, it is well to remember that these trends are not set off sharply from the developments of the preceding period.

tively small group, it should be noted) have risen at a rate of 3.4 per cent a year, in the face of a practically stable price level.[27]

More direct evidence concerning the change in agricultural conditions is afforded by the index numbers of prices at the farm, which are compiled by the Bureau of Agricultural Economics. In Table 12 are given rates of change in these indexes, together with rates relating to raw and processed products of American farms at wholesale, and rates of change in the prices of commodities purchased by farmers.

TABLE 12.—PRICE TENDENCIES AMONG AGRICULTURAL PRODUCTS AND AMONG COMMODITIES PURCHASED BY FARMERS

Commodity group	Number of commodities	Average annual rate of change, 1922–1927
		Per cent
Products of American farms, at wholesale:		
Raw materials	58	+1.2
Processed materials	143	+0.4
Farm products, prices at the farm	30	+1.1
Meat animals	5	+6.6
Grains	6	+4.3
Fruits and vegetables	8	+4.0
Dairy and poultry products	4	+0.2
Unclassified commodities	5	−3.7
Cotton and cottonseed	2	−7.5
Commodities purchased by farmers:		
For use in production	...	+0.6
For family maintenance	...	+0.3

The chief gain in the prices, at wholesale, of farm products, has been recorded by raw materials. Prices at the farm, as averaged for all farm products, have gained at a rate of 1.1 per cent a year. This average conceals important differences between groups. Substantial gains have been made by meat animals, grains, fruits, and vegetables. Dairy and poultry products have just held their own, while the unclassified commodities (which include horses, hay, flaxseed, wool, and tobacco) and cotton and cottonseed have declined materially. The agricultural improvement which is shown by these figures has been spotty. A survey of the figures for individual commodities, which are given in Table 2 of Appendix B, reveals similar differences between the rates at which the prices of individual commodities have changed.

Table 13, relating to various subdivisions of raw and processed materials, sheds further light on the price changes which have occurred in recent years.

[27] The "all commodities" index, constructed in the same way as the index numbers in Table 11, shows a gain at the rate of 0.08 per cent a year between 1922 and 1927.

TABLE 13.—PRICE TENDENCIES, RAW AND PROCESSED MATERIALS

Commodity group	Number of commodities	Average annual rate of change, 1922–1927
		Per cent
Raw materials	106	+1.4
Commodities not products of American farms	48	+1.7
Products of American farms	58	+1.2
Foods	53	+3.0
Nonfoods	53	−0.1
Consumers' goods	22	+2.3
Producers' goods	84	+1.3
Processed materials	298	−0.4
Products of American farms	143	+0.4
Commodities not products of American farms	155	−1.1
Foods	83	+1.4
Nonfoods	215	−1.0
Consumers' goods	150	0.0
Producers' goods	148	−0.7

The rise in raw material prices has already been commented upon. Among raw materials, foods have gained materially over nonfoods, and consumers' goods have gone up more rapidly than producers' goods. Of the processed materials, foods have risen, while nonfoods have declined, consumers' goods have held steady and producers' goods have declined.[28]

A broader picture of the conflicting movements within the price system is afforded by Table 14, giving the rates of change of the various indexes from which the index of the general price level is constructed by the Federal Reserve Bank of New York.

The movement of the general index has been upward in recent years, as opposed to the slight declining tendency of the index of wholesale prices. Among the various group indexes, security prices have shown a quite phenomenal gain since 1922, the rate far exceeding those at which other elements of the price system have changed. Wages, as measured by the present index, come next, having gained at a rate only slightly below 3 per cent a year. The only material declines are found in transportation costs and the prices of industrial commodities at wholesale. The relation between the movement of wages, industrial commodity prices, and certain other price groups has already been commented upon.

[28] The revised index numbers of the Bureau of Labor Statistics include indexes of the prices of raw materials, semimanufactured articles, and finished products. Average annual rates of change, 1923–1927, have been as follows: Raw materials, +0.5; semimanufactured articles, −1.9; finished products, −0.4.

Raw materials and finished products stand in the same relative position as in Table 13. A considerable decline is shown in the prices of semimanufactured articles.

TABLE 14.—MOVEMENTS OF WAGES, RENTS, AND PRICES[a]

Group	Average annual rate of change, 1922–1927
	Per cent
Security prices	+9.1
Wages	+2.8
Food prices, retail	+2.4
Equipment and machinery	+1.3
Prices at the farm	+1.1
Automobile prices	+0.9
Hardware prices, wholesale	+0.3
Rents	0.0
Realty values	−0.1
Cost of living items, other than food and rents	−0.3
Transportation costs	−1.5
Industrial commodity prices, at wholesale	−1.8
Total (index of general price level)	+1.5

[a] Following are descriptions of the items entering into the general index:

Security Prices.—Preferred stock (weight 1); common stock (weight 4); inverted yield on 60 high-grade bonds (weight 5). Federal Reserve Bank of New York, from data of Standard Statistics Co.

Wages, Composite.—Based on agricultural wages (rate), weight 5; railroad wages (earnings), weight 10; teachers' salaries (rate), weight 5; factory wages (earnings), weight 40; building wages (rate), weight 15; clerical wages (earnings), weight 15; unskilled labor wages (rate), weight 10. Federal Reserve Bank of New York.

Retail Food Prices.—43 articles of food in 51 cities, United States Department of Labor.

Equipment and Machinery.—Federal Reserve Bank of New York.

Farm Prices at the Farm.—Farm prices of 30 commodities, United States Department of Agriculture.

Automobile Prices.—Weighted price index of six makes of passenger cars. Data from Raymond B. Prescott.

Wholesale Hardware Prices.—Index of National Retail Hardware Association.

Rents.—Cost of housing in 32 cities, United States Department of Labor (monthly changes interpolated arithmetically).

Realty Values.—Urban, Federal Reserve Bank of New York (weight 4). Farm, estimated value per acre, United States Department of Agriculture (weight 1).

Other Cost of Living Items.—Cost in 32 cities of clothing (weight 4), fuel and light (weight 1), house furnishing goods (weight 1), and miscellaneous (weight 4). United States Department of Labor (monthly changes interpolated arithmetically).

Transportation Costs.—Federal Reserve Bank of New York. Railway Freight Receipts per ton-mile, United States Interstate Commerce Commission (1913–1919, inclusive monthly average only, and current data from United States Department of Commerce, "Survey of Current Business").

Industrial Commodity Prices, at Wholesale.—Nonagricultural Prices, United States Department of Labor.

Finally, we may summarize certain figures, comparable to those given in Table 8 for prewar years, relating to living costs and the earnings of labor.

It is noteworthy that the average annual rates of increase in earnings, as shown by these various indexes, fall very close to the rates at which money earnings were increasing during the two decades preceding the war. (See Table 8.) The great difference between prewar and postwar conditions, in respect to the present set of measures, is owing to the difference between the trends of living costs in prewar and in postwar days. The rise in living costs between 1896 and 1913 accounted for substantially all of the increase in the earnings of factory labor, and left

only a small margin of gain for all groups of employees. But in postwar years living costs have increased at a rate of less than 1 per cent a year, while money earnings (except for women employees in manufacturing

TABLE 15.—POSTWAR TENDENCIES, COST OF LIVING, AND THE EARNINGS OF LABOR

Index[a]	Average annual rate of change, 1922–1927
	Per cent
Cost of living	+0.7
Wages (general)	+2.8
Per capita earnings of factory labor	+2.4
Earnings of factory labor, New York State	+2.8
Earnings of factory labor, Massachussetts	+2.4
Earnings of factory labor, total, 23 industries[b]	+2.0
Men	+2.6
Unskilled	+3.0
Skilled	+2.2
Women	+1.1

[a] The measures given are based upon the movements of the following indexes and compilations:
Cost of living.—Index of the United States Bureau of Labor Statistics.
Wages (general).—Index of the Federal Reserve Bank of New York. (See footnote to Table 14.)
Per capita earnings of factory labor.—Derived from data on employment and pay rolls, compiled by the United States Bureau of Labor Statistics.
Earnings of factory labor, New York.—Compiled by the New York State Department of Labor.
Earnings of factory labor, Massachusetts.—Compiled by Massachusetts Department of Labor and Industries, Division of Statistics.
Earnings of factory labor, 23 Industries.—Compiled by the National Industrial Conference Board.
[b] The data upon which these rates are based cover the period July, 1922—December, 1927.

plants) have gone up at rates varying from 2 to 3 per cent. The gain in well-being is measured, of course, by the margin between the two. Accepting the measures in the above table as accurate, they show a gain in the purchasing power of wages in general at a rate of 2.1 per cent a year, between 1922 and 1927. For factory employees, the purchasing power of per capita earnings has gone up at a rate of 1.7 per cent.[29] These are materially greater than the corresponding values of 0.5 and 0.1, for prewar years.

The figures in the various tables above give some indication of the nature of the forces which have been in operation in the United States in recent years. For a more complete picture, the measures relating to price movements should be supplemented by corresponding measures relating to the production and distribution of goods, and certain measures of this type will be given in the next section. Some of the conclusions suggested by a survey of the price figures are summarized below:

1. During the period 1922–1927, the general level of wholesale prices showed a slight declining tendency, but there were pronounced differences among commodity groups in the direction and degree of price change.

[29] These rates relate to the actual earnings of employed workers. They should be read with reference to the unemployment figures cited in Chapter VI, pp. 462–478.

2. The prices of building materials, textiles, house furnishings, metal products, and fuels declined substantially.

3. Raw materials rose in price, while processed materials declined; foods gained, while nonfoods declined; consumers' goods advanced slightly while producers' goods remained substantially at a level. The small group of products of exclusively foreign origin rose materially in price, while products of exclusively domestic origin declined.

4. Cultivated products advanced in price; noncultivated, or industrial, products declined. In the general advance of cultivated products, the products of American farms shared. The advance in the prices of cultivated products was greater for raw materials than for fabricated goods made from such materials.

5. Prices of farm products at the farm advanced at a rate slightly exceeding 1 per cent a year. There were, however, great inequalities in the movements of different types of farm products. Meat animals, grains, and fruits and vegetables scored the greatest advances, gaining at rates varying from 4 per cent to more than 6 per cent a year. Cotton and cottonseed declined at a rate of 7.5 per cent a year.

6. When other price fields are included in this survey, still more pronounced differences are found. Security prices have leaped upward at an average rate of 9 per cent a year.[30] Important declines were registered in transportation costs, and cost of living items, other than food, fell somewhat.

7. The rate of gain in money wages in postwar years has been very close to that which prevailed during the two decades before the war. The advance in the earnings of factory labor has been at a rate of from 2 to 2.5 per cent a year; the advance in general wages has been slightly above this figure. The postwar gain in the purchasing power of labor has been at an appreciably higher rate than it was between 1896 and 1913, for living costs have gone up since 1922 at a rate much lower than that measuring the change in earnings. The purchasing power of earnings in recent years appears to have increased at a rate slightly below 2 per cent a year.

IV. POSTWAR TENDENCIES IN AMERICAN BUSINESS

It is an incomplete view of economic developments which takes account only of movements in the field of prices. In the tables which follow, are shown a number of measures defining postwar economic movements over a much broader field. Space limitations make it necessary to leave

[30] This figure serves to emphasize the need of caution in speaking of these postwar movements as "trends." They are not trends in the accepted sense of that word, for the period covers but six years. The measures given are significant as indexes of tendencies which have been operating during this six-year period, but not as measures of trends.

almost entirely to the tables the task of telling the story of recent economic tendencies. Considerable information may be gleaned from a detailed study of these tables, and of additional tables given in the Appendix.

The first table deals with general tendencies in the field of production.

TABLE 16.—INDEXES OF PRODUCTION

Index[a]	Average annual rate of change, 1922–1927
	Per cent
Production of raw materials	+ 2.5
Minerals (9 commodities)	+ 5.7
Crop marketings[b] (26 commodities)	+ 2.4
Animal products, marketings[b] (9 commodities)	+ 1.1
Forest products (13 commodities)	+ 0.6
Production of manufactured goods	+ 4.0
Chemicals, oils, etc	+ 9.9
Miscellaneous	+ 6.3
Stone and clay products	+ 5.6
Tobacco	+ 5.1
Metals, excepting iron and steel	+ 4.0
Iron and steel	+ 3.6
Lumber	+ 2.3
Foodstuffs	+ 2.0
Paper and printing	+ 1.5
Textiles	+ 0.8
Leather	− 1.1
Supplementary indexes:	
Petroleum refining	+12.6
Electric power production	+10.5
Rubber tires	+ 9.8
Automobiles	+ 4.2

[a] The indexes, with the exception of the last four, are those of the Department of Commerce. Descriptions and current values of these indexes are to be found in the *Survey of Current Business*. Three of the supplementary indexes are taken from those constructed by the Federal Reserve Board, appearing currently in the *Federal Reserve Bulletin*.

[b] The measures relating to crop marketings and the marketings of animal products are here employed as indexes of production, although they deal with the distribution, rather than the production, of goods.

Measures of change in the constituent series, from which the above indexes are derived, together with measures for certain additional production series, will be found in Table 3, in Appendix B.

The differences among the rates of change of the various production groups are greater, for the list as a whole, than the differences found in the study of price groups.

Table 17 shows the changes occurring during the last six years in the transportation and distribution of goods, and in series directly related to commercial transactions.[31]

[31] Additional measures relating to the movements of goods are given in Table 4, Appendix B.

TABLE 17.—THE DISTRIBUTION OF GOODS

Series	Average annual rate of change, 1922–1927
	Per cent
General indexes:	
Check payments outside New York City[a]	+ 7.0
Ton-miles of freight carried	+ 4.0
Freight car loadings	+ 3.2
Agricultural movements[b]	+ 1.5
Sales, wholesale[a,b]	+ 0.7
Freight car loadings:	
Miscellaneous	+ 4.9
Coal and coke	+ 3.5
Merchandise and l.c.l.	+ 2.6
Ore	+ 1.9
Forest products	+ 1.9
Grain and grain products	− 0.4
Livestock	− 1.8
Crops, marketings:[c]	
Cotton products	+ 9.2
Fruits	+ 2.8
Vegetables	+ 1.5
Grains	− 2.6
Wholesale distribution—sales in wholesale establishments:[a,d]	
Meat	+ 5.9
Drugs	+ 4.1
Furniture	+ 2.6
Men's clothing	+ 2.2
Hardware	+ 1.3
Boots and shoes	+ 0.7
Groceries	− 0.1
Dry goods	− 0.7
Women's clothing	− 7.4
Jobbers' sales of iron, steel and other heavy hardware[e]	+ 7.4
Retail distribution:[a,f]	
Mail order house sales (4 houses)	+ 9.2
Ten-cent chain store sales (4 chains, average per store)	+ 4.5
Department store sales (359 stores)	+ 3.9
Chain store sales (number of chains constant, but number of stores not constant)—	
Groceries (27 chains)	+20.6
Five and ten (5 chains)	+12.0
Drug (9 chains)	+11.7
Candy (5 chains)	+ 8.0
Shoe (6 chains)	+ 5.7
Cigar (3 chains)	+ 3.9
Music (4 chains)	+ 2.9
Imports[a]	+ 6.0
Foodstuffs, crude, and food animals	+10.0
Crude materials	+ 7.9
Semimanufactures	+ 5.6
Finished manufactures	+ 5.3
Manufactured foodstuffs	− 0.7
Exports[a]	+ 4.7
Finished manufactures	+ 9.1
Semimanufactures	+ 8.1
Crude materials	+ 3.1
Foodstuffs, crude, and food animals	− 0.2
Manufactured foodstuffs	− 4.4

[a] Dollar value series.
[b] Indexes of the Federal Reserve Board.
[c] Indexes of the Department of Commerce.
[d] The indexes, as compiled by the Federal Reserve Board, are based upon sales in wholesale establishments, as follows: Meat—61 firms in 51 cities; drugs—92 firms in 60 cities; furniture—87 firms in 36 cities; men's clothing—13 firms in 5 cities; hardware—186 firms in 114 cities; boots and shoes—89 firms in 52 cities; groceries—362 firms in 213 cities; dry goods—146 firms in 84 cities; women's clothing—40 firms in 1 city.
[e] Based upon data compiled by the American Iron, Steel, and Heavy Hardware Association. The index is published in the *Survey of Current Business*.
[f] Indexes compiled by the Federal Reserve Board.

The different index numbers from which the above measures have been derived represent their fields with varying degrees of accuracy.

Some are based upon exhaustive data, some upon samples of questionable adequacy. Accordingly, the different measures brought together in Table 17, and in other tables of the present section, must be compared with caution.

With few exceptions, the measures indicate that goods have been moving from producer to consumer in a steadily growing volume. However, the measures relating to retail distribution do not necessarily indicate an increasing volume of total retail sales. In considerable part, they reflect the shifts in channels of retail distribution characteristic of recent years. This is particularly true of the chain store sales, where the number of stores is not constant. The figures indicate how rapid the increase in volume of business has been for certain of the chain stores. The sales (dollar value) of 27 grocery chains, for example, have increased during the period 1922–1927 at an average annual rate slightly in excess of 20 per cent.

TABLE 18.—COMMODITY STOCKS AND UNFILLED ORDERS

Series	Average annual rate of change, 1922–1927
	Per cent
Commodity stocks, all commodities[a]	+ 5.4
Raw materials, total	+ 5.9
Textiles	+ 7.0
Foodstuffs	+ 6.6
Chemicals and oils	+ 4.3
Metals	− 4.1
Manufactured goods, total	+ 4.6
Rubber	+13.8
Stone, clay, and glass	+13.6
Iron and steel	+ 9.2
Lumber	+ 5.8
Chemicals and oils	+ 5.8
Nonferrous metals	+ 3.3
Textiles	+ 1.0
Foodstuffs	+ 0.8
Paper	− 1.1
Leather	−10.1
Unfilled orders, all groups[b]	− 7.9
Lumber	− 3.1
Brick and glass	− 3.1
Textiles	− 4.7
Vehicles	− 8.5
Iron and steel	− 9.4

[a] Weighted indexes of stocks of commodities held at the end of each month, as compiled by the Bureau of the Census from data on 65 commodities. The indexes are published in the *Survey of Current Business*. Measures relating to the stocks of a number of individual commodities are given in Table 5, Appendix B.

[b] Compiled by the Bureau of the Census from data on 17 commodities, weighted. In addition to the groups named, data are also included in the total for one class of paper. The indexes are published in the *Survey of Current Business*.

The measures showing the changes in the volume and character of our foreign trade indicate that imports have been growing at a somewhat more rapid rate than exports, and that our exports of manufactured articles, other than foodstuffs, have been expanding rapidly. The only decline among the broad import groups here shown is found among manufactured foodstuffs.

Because of recent shifts in marketing methods, considerable interest attaches to changes in the volume of unfilled orders and in commodity stocks. Measures relating to these series appear in Table 18. It should be noted that the data on commodity stocks do not relate to mercantile stocks, but, primarily, to stocks in the hands of producers and manufacturers.

In spite of the emphasis upon hand-to-mouth buying, stocks of both raw materials and manufactured goods have increased steadily in recent years. The only three groups to show declines are raw metals, leather, and paper (in the case of the latter group, the decline occurred in wood

TABLE 19.—BUILDING ACTIVITY AND BUILDING COSTS

Series	Average annual rate of change, 1922–1927
	Per cent
Construction volume (actual installations)[a]	+6.2
Contracts awarded for building construction[b]	+5.7
Residential buildings	+7.4
Public and semipublic buildings	+7.2
Commercial buildings	+5.4
Industrial buildings	−0.5
Educational buildings	−4.2
Building costs:	
Building material prices[c].—	
Frame buildings	−0.2
Brick buildings	−0.5
Construction costs (including labor costs)—	
Index of Engineering News Record[d]	+1.8
Index of Associated General Contractors of America[e]	+0.9
Factory building costs, Aberthaw index	+1.4
Indexes of the American Appraisal Co.—	
Brick building, wood frame	+0.9
Frame building	+0.8
Reinforced concrete building	+0.4
Brick building steel frame	+0.2

[a] From index compiled by the Associated General Contractors of America.

[b] From the data compiled by the F. W. Dodge Corporation. The original data are in thousands of square feet.

[c] Measures based upon price compilations by the Bureau of Standards. For detailed explanation, see *Survey of Current Business*.

[d] Index based upon the costs of steel, cement, and lumber, and the wages of common labor in a number of cities.

[e] An index combining wage and material costs, in the proportion of 40 per cent for wages and 60 per cent for materials.

pulp). It is possible that there have been changes since prewar days in the agencies holding the stocks, but there is no general tendency for the total volume of commodity stocks to decline.

In contrast to the increase in stocks is the pronounced decline in unfilled orders, a decline to which there is no exception among the major groups listed above. This decline is the more notable in that it has occurred during a period when the volume of production and the volume of trade have been increasing steadily.

The volume of building, which is measured in Table 19, increased at an average annual rate of about 6 per cent between 1922 and 1927, a figure materially higher than the 2.5 and 4.0 which measure, respectively, the rates of increase in primary production and in the production of manufactured goods during the same period. This increase has been owing entirely to marked increases in the volume of residential, public, and commercial building. The volume of industrial and educational building has declined. This increase in the volume of building has been accompanied by declining prices of building materials, but general construction costs, which include labor costs, have gone up slightly during this period.[32]

The measures in Table 20 relate to another and highly important aspect of the postwar economic scene.

TABLE 20.—EMPLOYMENT, PAY ROLLS, AND PER CAPITA EARNINGS IN MANUFACTURING INDUSTRIES[a]

Industrial group	Average annual rate of change, 1922–1927		
	Employment	Pay rolls	Per capita earnings
	Per cent	*Per cent*	*Per cent*
Lumber and its products	−2.8	+0.2	+3.1
Stone, clay, and glass products	−0.3	+2.7	+3.0
Iron and steel and their products	−0.6	+2.1	+2.6
Miscellaneous industries	+0.8	+3.5	+2.6
Paper and printing	+1.6	+3.9	+2.3
Food and kindred products	−1.4	+0.8	+2.2
Chemicals and allied products	+0.3	+1.9	+1.6
Vehicles for land transportation	−0.9	+0.6	+1.5
Textiles and their products	−2.6	−1.4	+1.2
Tobacco products	−4.7	−4.5	+0.2
Metal products other than iron and steel	−1.5	−1.3	+0.2
Leather and its products	−2.3	−2.6	−0.3
All industries	−0.7	+1.7	+2.4

[a] The data from which these rates have been computed were compiled by the United States Bureau of Labor Statistics. The rates of change in employment and pay rolls were derived from the data as compiled; the rates of change in per capita earnings were computed from the employment and pay roll figures. The data cover the period July, 1922–December, 1927.

[32] See Chap. III, Construction.

The measures for "all industries" bring out certain important characteristics of the postwar period. There has been a slight but significant decline in the volume of employment in manufacturing industries in the United States, accompanied by a material increase in pay rolls and a somewhat greater increase in the per capita earnings of factory employees. In interpreting these figures, it must be remembered that during this period there has been an increase in per capita production in manufacturing industries at a rate not far below 4 per cent a year. And these movements have accompanied a steady decline in the prices of industrial commodities.

In nine of the twelve major industrial groups there has been a decline in the volume of employment; in four of the twelve there has been a decline in pay rolls; and in only one of the twelve has there been a decline in the per capita earnings of employees. A more detailed view of these tendencies is given by Table 6, Appendix B, where there appear figures for the 54 industries from which the group totals have been secured.[33] Employment has declined in 37 of these 54 industries, pay rolls have declined in 26, and per capita earnings have declined in only six industries.

In these conflicting movements is found a partial explanation of the industrial distress which has been felt in some industries and among some groups of workers, although general wages and production have been steadily increasing. The decline in employment in 37 of the 54 industries is an obvious cause of such distress. Important, too, is the fact that actual wage disbursements have declined in almost half the industries (in 26 of the 54). It is true that the total volume of wage disbursements has gone up, but it is the changes in employment and in wage payments in specific industries which affect individual workers.[34]

Changes in corporation profits during the postwar period under review are shown in Table 21.

An important qualification to be borne in mind in interpreting the figures in Table 21, and, particularly, in comparing them with the measures given in other tables, is that the profits figures relate only to the years 1923–1927. Data precisely corresponding to those here employed were not available for 1922. It is probable that, for most of the groups represented in the above table, the rates of change would be somewhat greater if 1922 had been included, for general profits in that year were not as high as in the following years. Again, it is to be noted that the

[33] The data for certain industries do not cover the entire period, and figures for these industries, accordingly, are not fully comparable with the measures for the other industries.

[34] There is reason to suspect a downward bias in the factory employment and factory pay roll compilations from which the above measures have been divided. Since each comparison of employment or of pay roll disbursements at different dates relates to identical establishments, figures relating to new plants are excluded.

rates of change are based upon the aggregate profits in each of the groups. In the computing of such aggregates, large corporations dwarf the smaller ones. For certain purposes it is desirable that aggregate figures should be used and that the large corporations should be given predominant weight. If the data permitted, it would be well to supplement these figures with others, in which changes in the profits of smaller corporations could be followed.

TABLE 21.—CORPORATION PROFITS[a]

Industrial group	Number of corporations	Average annual rate of change, 1923–1927
		Per cent
Public utilities	129	+14.7
Public utilities other than telephone	51	+15.0
Telephone companies	[b]78	+14.2
Industrial and miscellaneous corporations	381	+ 9.0
Leather and shoes	9	+28.8
Motors	22	+22.5
Amusement	6	+18.2
Miscellaneous industries	58	+15.0
Machine and machine manufacturing	18	+14.9
Metals and mining	19	+13.9
Stores	19	+12.4
Chemicals and drugs	14	+12.3
Rubber	11	+11.3
Tobacco	16	+ 9.2
Oils	31	+ 6.7
Food and food products	39	+ 4.7
Steel companies	26	+ 0.4
Motor accessories	18	− 1.0
Building supplies	19	− 2.2
Paper	9	− 4.4
Railroad equipment	12	− 6.1
Clothing and textiles	24	−10.5
Coal	11	−48.6
Class I railroads	[b]183	+ 4.2

[a] The data from which these rates have been computed were compiled by the Federal Reserve Bank of New York.

[b] The number of telephone companies and the number of railroads represented vary somewhat as a result of consolidations.

Taken as they stand, these figures reveal an extraordinary increase in the profits of certain corporate groups. Profits of public utilities have grown at a rate of 14.7 per cent a year; for nine of the nineteen industrial and miscellaneous corporations, the rate of increase has exceeded 10 per cent a year. Six corporate groups have shown declining profits, the most severe losses having occurred in the clothing and textile and coal industries.

The tendencies in respect to profits which are shown in this table are in part explained by a comparison of the rates of change in prices,

production, and other economic series which were given in earlier tables.[35] Some of the difficulties in the way of such comparison have already been suggested. To these may be added the final point that the figures for prices, production, stocks, profits, etc., are representative in varying degrees of the industries to which they relate. In spite of these limitations, the comparison is instructive.

Supplementary to the data on profits are measures of changes in the volume of disbursements by corporations, in the form of dividend and interest payments.

TABLE 22.—DIVIDEND AND INTEREST PAYMENTS[a]

Series	Average annual rate of change, 1922–1927
	Per cent
Total dividend and interest payments	+ 7.0
Total dividend payments	+ 6.7
Street railways	+12.5
Industrial and miscellaneous corporations	+ 6.8
Steam railroads	+ 4.5

[a] The measures in this table are derived from data compiled by the *New York Journal of Commerce*.

These payments have increased, as is to be expected, at rates somewhat lower than aggregate corporate profits. Yet the rates of growth in disbursements to bond and stockholders during this period of industrial recovery and business prosperity have been rapid.

One other aspect of the economic situation in recent years is revealed by measures relating to bankruptcies among business concerns.

TABLE 23.—BUSINESS FAILURES, COMMERCIAL ENTERPRISES[a]

Series	Average annual rate of change, 1922–1927	Series	Average annual rate of change, 1922–1927
	Per cent		*Per cent*
Number of business failures	+0.9	Liabilities of business failures	−5.5
Agents and brokers	+8.0	Trade establishments	−2.9
Manufacturing establishments	+0.7	Manufacturing establishments	−6.4
Trade establishments	+0.6	Agents and brokers	−8.4

[a] Measures derived from data compiled by *Dun's Review*.

[35] The highest of these figures, that for corporations engaged in the production of leather and shoes, is rather difficult to explain, in view of the tendencies in production and prices in this industry. In part, the increase is owing to the fact that 1923 was a year of very low profits for this group of corporations. The profit figures cover only 9 corporations, it may be noted, and are probably not representative of the industry as a whole.

In the difference between the tendencies measured above in regard to the *number* of business failures and the *liabilities* of business failures is found a key to one important aspect of the postwar economic situation which has not been brought out by the measures in earlier tables. In this period of expanding production and rising profits, the number of business failures has increased about 1 per cent a year, yet the liabilities of business failures have declined at a rate in excess of 5 per cent a year.[36]

TABLE 24.—INTEREST RATES, STOCK AND BOND PRICES, AND RELATED SERIES

Series	Average annual rate of change, 1922–1927
	Per cent
Bond prices and interest rates:	
Combined index of 40 bond prices[a]	+ 2.9
Interest rates on commercial paper[b]	− 2.3
Volume of sales:	
New York Stock Exchange sales—	
Stocks[c]	+20.5
Bonds[d]	− 1.1
Check payments in New York City[d,e]	+11.3
Stock prices:[d,f]	
Total stocks (229)	+13.4
Railroad stocks (31)	+11.3
Industrial stocks (198)	+14.1
Automobile stocks (10)	+42.5
Chain store stocks (11)	+30.7
Food stocks (9)	+20.8
Theater stocks (3)	+19.2
Utilities stocks (16)	+16.8
Tobacco stocks (7)	+14.9
Railroad equipment stocks (10)	+12.0
Steel stocks (9)	+ 8.9
Machinery stocks (5)	+ 8.3
Copper stocks (11)	+ 7.3
Rubber stocks (7)	+ 2.4
Petroleum stocks (17)	+ 1.5
Textile stocks (5)	−14.4

[a] Quoted as per cent of par value of 4 per cent bond. Index compiled by Dow, Jones & Co., from the yields of the average prices of the bonds for each day of the month. Average yields of component classes capitalized at 4 per cent to give the combined index.

[b] Interest rates on 4 to 6 months paper. Data are averages of weekly ranges in the New York market as published by the *Commercial and Financial Chronicle*.

[c] Data refer to number of shares.

[d] Dollar value series.

[e] Check payments are represented by debits to individual accounts as compiled by the Federal Reserve Board.

[f] Compiled by the Standard Statistics Co. Indexes are of common stock market values, weighted by the number of shares of each stock outstanding. The monthly figures are averages of weekly closing prices or last previous sale prices.

[36] Business failures during 1922 reflected, in part, the effects of the preceding business recession. For the period 1923–1927, the rates of change were: number of business failures, +4.9; liabilities of business failures, −3.4. These are probably better indexes of recent tendencies than are the measures which include 1922.

The failures of large concerns, that is, have decreased materially, but for the rank and file of business it would appear the stress of competition has not relaxed. These conditions stand in sharp contrast to those prevailing during the period of war-time prosperity. Between 1915 and 1919, both the liabilities and the number of business failures declined materially, the former by 63 per cent, the latter by 71 per cent.

A final set of measures, in Table 24, depicts certain financial movements, and reflects tendencies peculiarly characteristic of the period.

The decline in interest rates, the corresponding rise in bond prices, the great increase in speculative activity and the extraordinary advance in stock prices—these have been outstanding features of the period since 1922. They are summarized, and the several movements are given definite measures, in the preceding table, to facilitate comparison with the economic series already presented. As in treating many of the other sets of figures given in this survey, comparisons must be made with caution, for precisely the same corporate groups are not represented in the tables relating to employment, production, profits, and stock prices.

V. COMPARISON OF ECONOMIC TENDENCIES, 1902-1907, 1922-1927

Some interest attaches to a comparison, with respect to prevailing economic tendencies, of two periods which happen to be just 20 years removed—the periods from 1902 to 1907 and from 1922 to 1927. Each of these six-year periods was a time of rapid industrial growth. In these periods the physical volume of production and trade was expanding at rates which were exceptionally high. Yet in other respects there were fundamental differences between the economic conditions prevailing during these periods. That which gives chief interest to the comparison is the fact that the expansion of 1902–1907 ended in a major industrial collapse, while the growth of 1922–1927 appears to have been a sounder and more normal development. Certain of the resemblances and differences are revealed in Table 25.

Although the eighteen series listed therein are not in all respects comparable, they furnish the material for a general comparison. The increase in the physical volume of production, which was an outstanding characteristic of each of these periods, is clearly revealed. The rate of increase in agricultural production was slightly higher in the recent period (an advantage owing primarily to the pronounced rise in cotton production), but in the production of raw materials and of manufactured goods the earlier period shows distinctly higher rates of increase. This is true, also, in respect to each of the individual commodities listed, with the single exception of copper. The rates of increase in the production of cement, petroleum, anthracite and bituminous coal, pig iron, and coke ranged from 8 to 24 per cent a year during the period of remarkable industrial growth between 1902 and 1907. Check transactions outside

TABLE 25.—ECONOMIC MOVEMENTS IN THE UNITED STATES, 1902–1907, 1922–1927

Series[a]	Average annual rate of change	
	1902–1907	1922–1927
	Per cent	*Per cent*
Indexes of production:		
Agricultural products (crops)	+ 1.4	+1.8
Mineral products, raw	+ 8.8	+5.7
Manufactured products	+ 5.8	+4.0
Production of individual commodities:		
Raw and semiprocessed materials—		
Crude petroleum	+12.0	+7.4
Pig iron	+ 9.7	+4.1
Anthracite coal	+ 9.2	+3.3
Bituminous coal	+ 8.5	+3.5
Copper	+ 6.5	+8.4
Processed materials—		
Portland cement	+23.9	+7.5
Coke	+11.8	+4.5
Check transactions outside New York	+ 7.5	+7.0
Business failures:		
Number of concerns failing	− 1.1	+0.9
Liabilities of concerns failing	+ 5.2	−5.5
Earnings of labor and living costs:		
Cost of living	+ 2.1	+0.7
Money earnings, manufacturing industries	+ 1.9	+2.4
Money earnings, all groups	+ 2.4	+2.8
Purchasing power of earnings, manufacturing industries	− 0.2	+1.7
Purchasing power of earnings, all groups	+ 0.3	+2.1

[a] The series from which the rates of change between 1922 and 1927 are derived are those cited in the general tables appearing elsewhere in this chapter.

In computing rates of change between 1902 and 1907, use has been made of the following series: Indexes of the physical volume of production compiled by Edmund E. Day, *Review of Economic Statistics*, September, 1920, January, 1921; bank clearings outside New York; wages and cost of living indexes of Paul H. Douglas.

New York, which furnish a fairly accurate index of the volume of commercial transactions, were rising at practically the same rate during the two periods here considered—a rate of about 7 per cent a year.

The last two sets of items in the table present sharp contrasts. In the earlier period, the number of business failures showed a net decline, at an average annual rate of 1.1 per cent.[37] The liabilities of business failures increased between 1902 and 1907, however, at a rate slightly in excess of 5 per cent a year. In the period preceding the recession of 1908, the figures indicate that the mortality of smaller concerns was declining, while that of larger concerns was rising. Each of these figures is reversed in the recent period. The number of concerns failing increased

[37] There was, of course, a great increase in the number of failures in 1908, a year not included in deriving the above figure.

at a rate of almost 1 per cent a year between 1922 and 1927, while the liabilities of bankrupt enterprises declined at an average rate in excess of 5 per cent a year. It would appear that the recent period was one marked by fairly severe competition, with increasing failures among smaller concerns, while the larger enterprises secured the lion's share of the profits and showed a corresponding decline in business mortality.

More significant are the figures relating to the earnings of labor and living costs. In the recent period, as we have seen, living costs were rising slightly, money wages were increasing much more rapidly, and there was a net gain in the purchasing power of wages at a rate of about 2 per cent a year for all wage-earning groups, and at a rate of 1.7 per cent a year for labor in manufacturing industries. During the years from 1902 to 1907, the cost of living (Douglas's index) rose at a rate of 2.1 per cent a year, while the money earnings of all groups of wage workers rose at a rate of about 2.4 per cent a year and the money earnings of workers in manufacturing industries rose at a rate of about 1.9 per cent a year.

TABLE 26.—PRICE TENDENCIES IN THE UNITED STATES, 1902–1907, 1922–1927

Commodity group	Average annual rate of change	
	1902–1907	1922–1927
	Per cent	*Per cent*
All commodities	+2.5	−0.1
Cultivated commodities and their products	+2.5	+1.0
Noncultivated products	+2.6	−1.1
Cultivated commodities and their products, excluding rubber, processed textiles, leather and shoes	+1.2	+1.8
All other commodities (*i.e.*, all industrial goods)	+3.2	−0.9
Products of American farms in raw state	+1.0	+1.2
Raw materials	+1.8	+1.4
Processed materials	+2.7	−0.4
Consumers' goods	+2.4	+0.3
Raw	+0.3	+2.3
Processed	+2.7	+0.0
Producers' goods	+2.6	+0.0
Raw	+2.3	+1.3
Processed	+2.8	−0.7
Foods	+1.2	+2.0
Nonfoods	+3.1	−0.9
Building materials	+4.9	−1.2
Clothing	+4.6	−1.8
Metals and metal products	+4.4	−1.5
House furnishings	+1.7	−2.6
Foods	+1.3	+1.8
Farm products	+1.2	+1.4
Fuels	−0.8	−4.4
Chemicals and drugs	−2.2	−0.2

The purchasing power of earnings for all groups of workers showed a slight increase, while the purchasing power of the earnings of manufacturing labor declined at a rate of about two-tenths of 1 per cent a year during that period of general industrial prosperity.

Here, perhaps, is the most striking difference between the period which culminated in the great recession of 1908 and the period extending from 1922 to 1927. In the earlier period, general wages barely kept pace with living costs, while the earnings of factory workers actually fell behind living costs. The purchasing power of employed workers in this large group of consumers was being impaired, while the volume of production was increasing at a rate without precedent in recent times.[38] In the period following 1922, the volume of production increased, but at a somewhat lower rate than that prevailing between 1902 and 1907, and the purchasing power of the earnings of labor has continued to advance at a rate of from 1.5 to 2 per cent a year.[39]

The comparison of the two periods may be extended to include tendencies prevailing within the field of prices. Rates of change in wholesale prices for a number of commodity groups are shown in Table 26.

[38] It is important to note that Douglas's index, from which the rate of change in earnings for the period 1902–1907 has been computed, is based upon the earnings of *employed workers*. Prof. Paul F. Brissenden has constructed an index of the incomes of manufacturing labor, in which account is taken of changes in the volume of employment. Brissenden's index shows that the purchasing power of the incomes of manufacturing labor increased at an average annual rate of 1.6 per cent between 1902 and 1907. The volume of employment was, of course, increasing during this period, and it is this fact which accounts for the difference between the rates of change of Douglas's and Brissenden's index numbers.

[39] A revealing comparison of the two periods is afforded by certain data given in Dr. Wolman's chapter on Labor. The following rates of change have been computed from his figures.

	Average annual rate of increase	
	1902–1907	1922–1927
	Per cent	*Per cent*
Persons engaged in manufacturing industries	+3.7	+0.9
Volume of manufacturing production	+5.7	+4.3
Output per person	+2.0	+3.5

During the earlier period there was a much greater increase in the number of employed workers and a somewhat higher rate of increase in volume of production, but the increase in output per person was much lower than it was between 1922 and 1927.

The rates of change given above are not based upon the same original sources as were those cited in earlier pages. This accounts for the slight differences between the rates quoted.

The general resemblances between the two periods, which were found when quantity series were compared, is not found when attention is turned to price movements. The drift of the general price level was slightly downward between 1922 and 1927; the movement was upward at a relatively rapid rate between 1902 and 1907. But the differences go much deeper. Within each of the twofold classifications set up above, the relative movements between 1902 and 1907 are exactly the reverse of those prevailing between 1922 and 1927. In the earlier period, noncultivated products rose in price at a slightly higher rate than cultivated commodities and their products (this group includes all products of cultivation, animal and vegetable); in the period beginning in 1922, noncultivated products declined and products of cultivation rose in price. The contrast is the sharper, if we exclude from cultivated commodities and their products, rubber, processed textiles, leather, and shoes, placing these commodities with noncultivated products in a general group which may be designated *industrial goods*. Between 1902 and 1907, these industrial goods rose at a rate of 3.2 per cent a year, as compared with 1.2 per cent for the restricted group of cultivated commodities. Between 1922 and 1927, the group of industrial goods declined at a rate just short of 1 per cent a year (−0.9), while cultivated commodities and their products (with the exceptions noted) rose at a rate of 1.8 per cent a year. The sharp rise in the volume of industrial production in the early period was accompanied by an almost equally pronounced advance in the prices of industrial products. The increase in production in the later period has been accompanied by declining prices of industrial products. In the first period, products of cultivation lost in relative position; in the second period, they gained materially.

One aspect of this last condition is of considerable importance in relation to the continuation of the state of prosperity. In the earlier period, the general level of wholesale prices (as measured by the index at present under review) was increasing at a rate of 2.5 per cent a year; the prices of products of American farms in raw state (prices which reflect most closely the receipts of agricultural producers) were increasing at a rate of 1 per cent a year. The purchasing power of these products was declining. Between 1922 and 1927, the general price level (wholesale) was declining at a rate of 0.1 per cent a year; the prices of products of American farms in raw state were advancing at an average annual rate of 1.2 per cent a year. It is true that the postwar recession left farmers' purchasing power relatively low, but for this class of producers as a whole purchasing power was increasing steadily between 1922 and 1927.

It is not difficult to find roots of trouble in the situation which was developing between 1902 and 1907. The general purchasing power of agricultural producers, as a class, was being steadily impaired during that six-year period, and the real earnings of employed workers in manu-

facturing industries were declining.[40] In the corresponding postwar period, the purchasing power of these two groups was steadily advancing. In this difference is found one explanation of the relative soundness of recent economic growth.

The contrast between the two periods here under review might be elaborated by a discussion of price tendencies among the other groups listed in Table 26, but this comparison must be left to the reader. The fundamental difference between the periods in respect to price movements is revealed in each of the classifications cited. The similarity of quantity movements in these periods finds no parallel in the field of prices. In these differing price tendencies, and in the factors lying back of them, is to be found one key to an explanation of the important economic differences between these periods, one of which ended in economic collapse, the other of which has brought a condition of sustained well-being perhaps never before attained in our economic history.

VI. POSTWAR AND PREWAR PRICE RELATIONS

There is a final question concerning price relations in prewar and postwar years which is not answered by any of the measures discussed above. This has to do with the relations among the prices of commodities, and of groups of commodities, in postwar years, as compared with the relations prevailing at an earlier date. When we speak of the "structure of prices," we have in mind a more or less enduring system, in which the prices of individual commodities and of commodity groups stand in fairly well-defined relations to each other. It is obvious that there can be no such set of relationships in any absolute sense, that is, with reference to absolute prices. But *relative prices*, measured from a uniform base, may be thought of as constituting a system, and there may be economic significance to such a system. During a period of fairly regular economic growth, unmarked by such cataclysms as that which occurred between 1914 and 1921, there prevail important differences among the rates at which different commodities and groups of commodities are changing in price.[41] Certain commodities are declining in price (relatively to the movements of the general price level) because of lowered costs of production, lessened demand, or other causes, and other commodities are rising in price because of changes in extractive or demand conditions. These sustained and differing drifts of various elements in the price system are affecting economic relations, slowly but appreciably, and it is reasonable to think of the relative prices which reflect these differing movements as constituting a system of prices at a

[40] Because of the increase in the volume of manufacturing employment, the purchasing power of manufacturing labor as a group increased during this period.

[41] These movements, and their bearing upon the concept of "normal" price relations among commodities, are discussed in *The Behavior of Prices*, pp. 165–176.

given date. Such a "system" has meaning, of course, only with reference to the particular base from which the relative prices are measured, and its significance is conditioned by the choice of the base period, and by the economic significance of the changes which have occurred between the base year and the year, or years, in which the structure of prices is being studied.

If, now, we wish to study the relation of the postwar structure of prices to the prewar structure, we must define the base with reference to which all price changes are to be studied, and we must bear in mind the meaning which can be given to the "structure of prices." The first problem is that of defining the prewar structure of prices. If we adopt the base common to most index numbers measuring price changes, we might base our relatives on the year 1913, and assume that the ranking of these relatives in the year 1914 served to define a price system typical of prewar conditions. Strong objections may be brought against this procedure. The changes of prices between 1913 and 1914 reflected only in small part enduring changes, resulting from fundamental shifts in economic relations. Such changes from one year to the next are due, primarily, to accidental movements, or to phases of cyclical changes, which have no significance as symptoms of fundamental changes. The system of prices which may be accepted as typical of prewar conditions should represent changes over a longer period. In the present study, two different standards have been employed and two sets of measures derived.

In the first of these, the base year used in the derivation of price relatives is 1891. The system taken to be representative of prewar price relations is defined by the ranking of these relatives in the year 1914. By 1914, the relatives on the 1891 base may be assumed to have reached fairly stable positions in relation to each other. The differences among them would reflect, to some extent, temporary dislocations owing to current cyclical and accidental movements, but the chief cause for differences among relatives on a base 23 years distant would be variations in underlying trends. Long-time changes in cost of production, enduring shifts in consumer demand, changes in styles and habits—all these would be reflected in the ranking of relatives on a base so many years removed.

But there are some objections to the use of a distant base, and accordingly a second set of measures has been computed. In this case, relatives on the 1909 base have been used, and a prewar price system has been defined by the ranking of these relatives, as averaged for the four years 1911–1914. This is, perhaps, more truly representative of the conditions prevailing at the close of the prewar epoch than is the system derived from relatives on the earlier base.

Changes in systems of prices as defined above are measured by *indexes of price displacement.*[42] The measure of price displacement (the term here used to define shifts in the relative positions of commodity prices) is one which fluctuates between values of 0 and 2. The value is zero if, between two dates, there has been no shift in the ranking of a set of price relatives. (That is, if the commodity which was lowest relatively, at the first date, is lowest relatively, at the second date, and if all the other commodities stand in precisely the same relative positions at the two dates.) The

[42] The index of price displacement is the value $1 - \rho$ where ρ is the coefficient of rank correlation.

$$\rho = 1 - \frac{6\Sigma d^2}{N(N^2 - 1)}$$

The significance of this index, as employed for the present purpose, is discussed more fully in *The Behavior of Prices*, pp. 286–311.

value of the measure is 1, if there is no correlation whatsoever between the relative positions of the various commodities at the two dates. In this case, the set of relations prevailing at the first date has been completely shattered by the second date. A value of 2 for the index of price displacement would indicate an exact reversal of the rankings throughout, the commodity which was lowest, relatively, at the first date being highest at the second date, and all the other commodities having reversed their relative positions in the same way. Such an exact reversal is not, of course, to be expected when dealing with price relatives.

Annual changes, during the period 1915–1927, in the two systems of prices described above, are measured by the indexes in Table 27.

TABLE 27.—MEASURES OF PRICE DISPLACEMENT, 1915–1927[a]

1	2	3	4
Years compared	Index of displacement computed from relatives, 1891 base	Periods compared	Index of displacement computed from relatives on 1909 base
1915–1914	.14	1915—av. 1911–1914	.43
1916–1914	.28	1916—av. 1911–1914	.57
1917–1914	.42	1917—av. 1911–1914	.79
1918–1914	.38	1918—av. 1911–1914	.75
1919–1914	.28	1919—av. 1911–1914	.62
1920–1914	.44	1920—av. 1911–1914	.76
1921–1914	.42	1921—av. 1911–1914	.78
1922–1914	.41	1922—av. 1911–1914	.75
1923–1914	.47	1923—av. 1911–1914	.78
1924–1914	.41	1924—av. 1911–1914	.72
1925–1914	.33	1925—av. 1911–1914	.66
1926–1914	.31	1926—av. 1911–1914	.64
1927–1914	.29	1927—av. 1911–1914	.63

[a] The indexes in column 2 were computed from 195 series, except for the years 1925, 1926, and 1927. In these years, 194, 193, and 189 series, respectively, were used.

The indexes in column 4 of this table were computed from 216 price series, except for the years 1925, 1926, and 1927. In these years, 213, 212 and 208 series, respectively, were used.

As is to be expected, the indexes of displacement computed from relatives on the 1891 base are distinctly lower than those on the 1909 base. The system of prices defined by the ranking in 1914 of relatives on the 1891 base was much more deeply seated, much more difficult to disrupt, than was the system defined by the ranking of relatives on the much more recent base, 1909.

The changes in the indexes of displacement, recorded in Table 27, are of considerable interest. The transition to the war economy brought a definite swing away from the prewar ranking, a swing measured by an index of 0.42 in the case of the 1891 relatives, and by an index of 0.79 in the case of the 1909 relatives. These represent fundamental shifts in price relations. (A value of 1, it will be recalled, would indicate the complete destruction of relations prevailing at the date serving as criterion.) In 1918 there was a minor movement back toward prewar relations, a movement which was much more pronounced in 1919. The

first effect of the end of the war, it is apparent, was to initiate a return to prewar price relations. (It is possible that this movement is in part a reflection of Federal price regulation from 1917 to 1919.) Between 1919 and 1923 there was another clear swing away from the relationships of prewar days. One of the indexes (that on the 1891 base) shows the situation in 1923 to be farther removed than that in 1917 from prewar relations. The movements of both indexes between 1923 and 1927 indicate an uninterrupted return toward the relationships prevailing before the war. The index constructed from 1891 relatives declined in four years from 0.47 to 0.29, and that based on 1909 relatives fell from 0.78 to 0.63.

Two noteworthy facts are revealed by these figures. The first is that the postwar price structure differs in important respects from that prevailing before the war. The decade which included the war and immediate postwar years witnessed fundamental shifts in the relative positions of different commodities and of different commodity groups. Measures of the degree of difference between prewar and postwar price structures vary in magnitude according to the standard selected as typical of prewar conditions. The system of price relations which embodied the results of changes during the five years from 1909 to 1914 has been substantially modified. The price structure which was built up during the quarter century preceding the war suffered less drastic changes, although it was materially altered by the price revolution which accompanied the war. The second point of importance is that during the period 1923–1927 there was a distinct return toward the relations which had been built up in prewar years, a tendency of considerable economic significance. Whether this tendency will continue to prevail is a question the future must answer.

VII. SUMMARY

This chapter deals with price changes and related industrial movements in the United States during the period 1922–1927. As a background for the general discussion, brief reference is made to price levels and price tendencies in other countries, and to prewar price tendencies in the United States. It is impossible effectively to summarize the various statistical measures which have been employed in this study, but certain of the results may be indicated.

1. The degree of increase in commodity prices, at wholesale, in gold, between 1913 and 1927 ranged, for 18 countries, between 23 per cent and 71 per cent. In the United States, wholesale prices increased 47 per cent during this period, a figure which is approximately equal to the median of the measures for the 18 countries.

2. Between 1922 and 1927, the general drift of world prices was downward. Of 19 countries for which measures were computed, the

net movement was downward for 15. The rates of decline varied from 0.1 to 6.5 per cent a year.

3. In many respects the postwar price situation stands in sharp contrast to that prevailing before the war, but recent tendencies should be considered in the light of prewar trends:

a. During the two decades before the war, the level of wholesale prices in the United States was rising at an average rate of 2.3 per cent per year. This rising tendency affected manufacturing methods and buying and selling habits, and confirmed business men in many practices not adapted to conditions under a stable price level or under declining prices.

b. During the quarter century preceding the war, commodity prices and the relations among such prices were relatively unstable. The prices of individual commodities were subject to relatively abrupt changes from month to month and from year to year, and the forces tending to alter existing price relations were strong. Both these conditions served to introduce a considerable degree of uncertainty into business operations, and to enhance the speculative features of business operations.

c. Perhaps more important, however, is the fact that these various measures of economic instability showed a definite tendency to decline during this prewar period. The variability of individual commodity prices was diminishing, and there was less disturbance in price relations. This downward trend is the more significant in that it accompanied a rising price level.

4. Certain of the general economic characteristics of the postwar period in the United States are suggested by the following figures, measuring average annual rates of change, between 1922 and 1927:

a. There was a sustained increase in the physical volume of production and in the rate of distribution. Primary production increased at a rate of 2.5 per cent a year, production of manufactured goods increased at a rate of 4 per cent a year, and volume of distribution, as measured by ton-miles of freight carried, rose at a rate of 4 per cent a year. These changes accompanied a population increase of about 1.4 per cent a year.

b. This increase in manufacturing production was accompanied by a definite decline in the volume of factory employment, a decline at the rate of 0.7 per cent a year. Per capita earnings of factory employees increased, however, at a rate of 2.4 per cent a year. During the same period, output per man in manufacturing establishments rose at a rate of 3.5 per cent a year.

c. The increase in production and in wages noted above accompanied a slightly declining level of wholesale prices. The rate of fall averaged 0.1 per cent a year. The decline occurred chiefly in the prices of nonagricultural products, which fell at a rate of 1.8 per cent a year.

Farm prices rose during this period at an average annual rate of 1.1 per cent.

d. Profits of industrial corporations increased, between 1923 and 1927, at an average rate of 9 per cent a year. Industrial stock prices rose, between 1922 and 1927, at a rate of 14.1 per cent a year.

5. The following are important general features of the postwar price situation:

a. The level of wholesale prices in the United States has shown no definite tendency either to rise or to fall since 1922. The net movement has been slightly downward. There is no present evidence, either in domestic or in world conditions, that the prewar rise will be resumed.

b. Important differences among commodity groups in respect to price trends are developing in the postwar era, differences which are in many cases more pronounced than those which prevailed before the war. These group tendencies are shown in detail in the various tables relating to price movements. Among the differences to be noted are the following (all statements relate to tendencies during the period 1922–1927):

Agricultural products have been rising in price; non-agricultural products have declined.

Raw materials have been rising in price; processed materials have fallen.

Foods have risen and nonfoods have fallen in price.

Consumers' goods have risen slightly; producers' goods as a class have neither fallen nor risen.

Prices of animal products and of cultivated vegetable products have shown a rising tendency; mineral products and forest products have declined in price.

Foreign products have risen in price; domestic products have declined slightly.

Among farm products, the chief gains in prices received by producers have been recorded for meat animals, grains, and fruits and vegetables. Cotton and cottonseed have declined materially in price.

c. War-time developments gave a sharp check to the prewar tendency toward economic stability, as reflected in the declining variability of individual prices and the greater stability of price relations. The extreme war-time disturbances persisted for several years after the close of the war, but since 1922 there have been fewer of those abrupt changes in prices and in price relations which characterized the nineties of the last century, and which gave to the war and immediate postwar years their distinctive business flavor. These tendencies toward price stability which have reasserted themselves after the disturbances of the war years will, if they persist, materially affect the economic complexion of the years before us. A tendency toward greater stability of prices and of price relations involves a change in the direction in which business

men look for profits. Something of the speculative element goes out of business when such a tendency prevails. The high profits and the great losses which go with extreme fluctuations in the prices of individual commodities and with changes in the relations among prices, alike tend to disappear. Business and prices both become more stable. There is evidence that our economic system is moving in this direction.

If we may anticipate approximate stability in the price level in the future, the expectation of greater stability in the prices of individual commodities and in price relations is strengthened.